

AN INVESTIGATION OF THE PSYCHOLOGICAL FACTORS AFFECTING THE
SUCCESSFUL OUTCOME OF LOW VISION EXAMINATIONS FOR ELDERLY
PATIENTS: TWO COMPARATIVE TREATMENT STRATEGIES AND THE
INFLUENCE OF COPING STYLE AND ANXIETY LEVEL

By

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Abstract of Dissertation Presented to the Graduate School
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Low vision care is a special area of optometry that helps visually impaired persons to optimize the use of their residual vision. The low vision examination is often a lengthy, trial-and-error process of searching to find low vision aids that restore some degree of visual functioning. This examination can be very stressful and requires a patient's attention, cooperation, and effort. For older persons, adjusting to the performance demands of a visual handicap is even more stressful. This study was designed to measure the effects of two comparative psychological treatment strategies for improving the results and benefits of a low vision examination for the elderly. Coping style and anxiety level were investigated to determine if individual differences in reaction to a stressful examination were important. The subjects of this study were 122 English-speaking volunteer patients of the Bascom Palmer Eye Institute

Low Vision Clinic, Miami, Florida, all of whom were over the age of 65. After passing a physical examination and mental status evaluation, the subjects were given one of three treatments prior to the low vision examination: (1) preparatory information about the low vision examination process, (2) psychological treatment, including preparatory information, brief counseling, and a relaxation exercise, or (3) no intervention. Coping style was assessed with the Short Repression Sensitization Scale and anxiety was measured with the State Trait Anxiety Inventory. The dependent variables used to measure the improvement in the results of the low vision examination were visual acuity, use of newly prescribed low vision aids, and reduced anxiety level. Principal findings were that of the three treatments, the subjects receiving the psychological treatment (preparatory information, brief counseling, relaxation exercise) showed significantly greater use of low vision aids and a decrease in state anxiety. Coping style and changes in visual acuity were not statistically significant variables. A weak relationship was found between the use of low vision aids and trait anxiety. The results suggest that psychological intervention shows promise as an adjunct to optometry in providing the optimal low vision services. Recommendations are made for further research.

CHAPTER I

INTRODUCTION

The purpose of this study is to compare the effects of two psychological treatment strategies for improving the results and benefits of a low vision examination among elderly people. Two personality factors, coping style and anxiety level, are also investigated to determine whether they play an important role in the outcome of a low vision examination.

The population of older Americans is steadily increasing; as people grow older and live longer, they develop more health problems. Many of these health problems are not acute and life-threatening but are chronic in nature, creating varying degrees of discomfort and disability. A new challenge has developed in health care delivery to meet the unique long-term health care needs of the elderly. One area of particular importance is that of low vision care; decreased vision is one of the most widespread chronic health concerns among the elderly. Low vision care, a specialized area of optometry and ophthalmology, assesses individual needs and provides low vision aids and appliances. It is widely accepted that psychological factors play an important role in the successful outcome of vision care. Coping style, attitude, motivation, and emotional demeanor are often discussed as critical factors in the low vision examination. Although it is theorized that these behavioral aspects of patients affect outcome, there have been relatively few studies conducted to examine this area. The present study investigates the interaction between optometry

and psychology in the care of elderly low vision patients. The challenge to meet the unique needs of the elderly low vision patient is also discussed.

The first section of this report details the following: a) the rationale for the present study, b) the significance of the study, c) the definition of terms, d) the questions the study seeks to answer, and e) the hypotheses tested.

Background

Visual impairment affects the elderly more than any other population. In general, 25% of the aged have significant visual impairment, according to Morse and Friedman (1986). In addition, 12% of United States inhabitants aged 65 and older meet the criteria for legal blindness.

Scientific and medical progress has contributed largely to the increase in life span and increased percentage of the population which is elderly. It is undeniable that more health problems develop as people age, and this has resulted in a shift in health trends. A majority of health conditions among the elderly are not acute and life-threatening as in previous years, but are chronic in nature. Hypertension, arthritis, and cardiac disease, as well as visual problems such as cataracts, glaucoma, and macular degeneration, are examples of chronic illnesses that plague the elderly. Such illnesses exact varying degrees of discomfort and disability. Though they may not be life-threatening, they can seriously compromise the quality of life at any age, especially in later years. Health care services will need to reorganize to meet the increased demand by the aged. Although, historically, acute care has been the focus of medicine, a shift to chronic care is occurring slowly (Adams &

Lindemann, 1974). The challenge to meet the explosive needs of the aged will continue to be an uphill battle as illness and population patterns shift.

The senses are affected as we age: the senses of smell, hearing, taste, and sight are not as sharp as in earlier years. The need for reading glasses around the age of 40 is one of the first benign signs of the degenerative process. Some decline is expected, but when it is significant, as is so often the case in ocular disease, more energy and attention is required for the person to cope and adjust.

Coping with chronic illness and medical treatments can be very stressful, and a wide variety of potential stressors exist. Cohen and Lazarus (1979) identified a series of stressors from the literature on stress, medical illness, and treatment. These included threats to life and body integrity, and threats to self-concept and future plans, which are more important to the present discussion. These threats necessitate altering one's self-image or belief system in dealing with uncertainty about the course of the illness and the future. Goals and values for one's life may have to change, and there is often a loss of autonomy and control. Emotional stability may be endangered as one confronts feelings of anxiety and other emotions; meanwhile, fulfillment of customary social roles and activities may change.

Visually impaired persons face many of these issues as they pass through the health care system. Initially, individuals experiencing serious visual difficulties usually seek an expert opinion from an ophthalmologist. Once a diagnosis has been determined and a patient cannot be helped further by surgery and/or medication, a referral should

be made to a low vision clinic for more practical assistance. Unfortunately, many ophthalmologists do not routinely suggest low vision services to their visually impaired patients. This is especially true for people over the age of 65 (Morse & Friedman, 1986). Therefore, a majority go unidentified, untreated, and are deprived of services that could prevent deterioration in the quality of their lives.

When low vision accompanies the aging process, it is an even more anxiety-provoking and depressing experience (Fitzgerald, 1971). Many of the tasks of daily living once taken for granted are now difficult or impossible to accomplish by conventional means. A person with low vision may not meet the criteria for legal blindness, a commonly used index, but may have significant functional visual disabilities. For example, a person with macular degeneration is no longer able to do comparison shopping, because price and content labels can no longer be read. People react to such limitations with frustration, depression, and feelings of hopelessness. Visually impaired persons may attend a low vision clinic hoping to solve this type of practical problem.

The low vision examination frequently provokes anxiety and distress. For many, it represents the "end of the road" in the search for assistance to improve visual functioning. Therefore, the interest of the clinic personnel is critical to the tone and effectiveness of the examination. Typically, the optometrist labors to discover the limits of visual ability by asking the patient to perform to failure so that the specialist can determine the most effective aids available for each unique visual impairment. It is often a lengthy trial and error process in which the patient must actively participate to accurately determine the best help available.

An individual already facing daily limitations can view this examination as even more evidence of an inability to function.

Additionally, this is probably the final examination in a process of moving through the medical system that has not yielded any significant improvement in visual functioning. Initial optimism is often diminished or lost by this point and replaced by fear and hopelessness. There is pressure on the patient who is hoping for lenses or an aid that will restore functioning. If there is no significant improvement from this examination, the patient and his/her family faces adjustment to the present disabling condition. Very often this means the loss of a driver's license or the ability to read. Clearly, this kind of confirmation is stressful.

Low vision care is influenced by many factors, including the critical role of personality factors. The nature of the vision loss does not always predict outcome. Few reports in the low vision literature attempt to examine both the psychological and physiological aspects of low vision rehabilitation (Mehr & Mehr, 1969).

Loss of vision is among life's most potent stressors, because every area of functioning is affected. The way a person approaches the stress is critical. The literature has documented that people vary in their preference of coping strategies and that coping style plays an important role in adjustment to low vision. How a patient reacts to stress influences how he/she will cope with any disability. Accepting the challenge of coping in a visually oriented world requires the use of inner resources and a strong self-concept. Flexibility to change and the ability to utilize human and technological resources are qualities that contribute

to a healthy coping style (Moos & Tsu, 1977). In an anxiety-provoking or threatening situation, individuals cope with a noxious stimuli by utilizing a particular response style. Two polar opposites have been observed. Repression or denial is the avoidance of the threat by minimizing or denying its existence, while sensitization is a confirmation of the threat, accompanied by worry or obsession over all information and its implications (Bell & Byrne, 1978). The behavioral dimension of repression-sensitization places individuals along a continuum with respect to their characteristic mode of response to threatened stimuli. The present study investigates coping style to determine its impact on the success of a low vision examination among elderly patients.

Anxiety is an important psychological variable involved in the low vision examination process. The present study investigates the relationships between anxiety and the successful outcome of a low vision examination. While fear and anxiety can be distinguished, they are treated here together for two reasons: both are experiences of threat, and they are often undifferentiated by theorists. Fear is most generally considered a reaction to a clearly perceived threat, whereas anxiety is a more diffused reaction to a less specific or less clearly perceived threat (Welsh & Blasch, 1980).

The impact of psychological variables on physical and cognitive behavior is well known and readily accepted. Nervousness or a strong desire to win can affect the performance of an athlete. Fear of failure or lack of self-confidence can influence a student's performance, as can the attention and support of others. The interaction of the emotions,

the mind, and the body have been demonstrated in the research in a number of disciplines (Welsh & Blasch, 1980).

The present study seeks to determine the impact of two psychological interventions on performance during a low vision examination. Specifically, two stress-reducing treatments are tested. The first involves the use of preparatory information. In this treatment, instructions about the low vision process are given before the examination. Recent research in medical psychology, especially in the area of surgery, has demonstrated that preprocedure instruction can reduce anxiety and improve results (Andrew, 1970; Pickett & Clum, 1982). Many studies have compared this cognitive intervention to interventions directed at emotional and/or physical changes (Healy, 1968; Langer, Janis, & Wolfer, 1975; Scott & Clum, 1984). The present study compares the preparatory information treatment with a second, more intensive psychological treatment. The second condition includes giving preparatory information, followed by a brief counseling session and a relaxation exercise.

Clarification of the Problem

The research conducted focused on comparing two psychological treatment strategies to improve the results of a low vision examination. Coping style and anxiety level were investigated to determine if these factors play an important role in the outcome of a low vision examination. Performance was divided into three parts: visual acuity, use of low vision aids, and anxiety level.

The subjects in this study were volunteer, elderly, English-speaking patients of the Low Vision Clinic at Bascom Palmer Eye Institute, Miami, Florida. All scheduled clinic patients over the age of 65 received an

introductory letter describing the study. They were contacted by telephone prior to their scheduled appointment and asked if they wished to participate. If they agreed, the consent form was read and a verbal consent noted. An information sheet, the Short Repression Sensitization Scale, and the State Trait Anxiety Inventory-Trait were completed by telephone, and the subjects were asked to come to the clinic 30 minutes ahead of their scheduled appointment. At the clinic, all subjects were read the consent form and asked to sign it, and then the Mini-Mental Status Examination was administered. If the subjects appeared physically and cognitively fit to participate, they were given the State Trait Anxiety Inventory-State as a pretest measure and assigned to one of three groups. Control group subjects received no intervention. Preparatory information explaining the process of the low vision examination were given to the second group of subjects. The third group received preparatory information followed by a brief counseling session and a relaxation exercise. Following the low vision examination, all subjects were given the State Trait Anxiety Inventory-State as a posttest measure. Approximately one month after the low vision examination, subjects were contacted by telephone and asked to rate the usefulness of prescribed low vision aids.

A second control group was utilized, that of all nonparticipants who were elderly patients scheduled for the Low Vision Clinic. These subjects were contacted by telephone, asked to answer some general questions, and read the consent form. Once consent was given, demographic information was gathered. This group was designed to guard against selection bias due to the volunteerism of the study.

Significance of the Study

This study tests the efficacy of psychological treatment in a medical setting. Additionally, it tests the effects of psychological interventions in a low vision examination. If the results of the low vision examination are successful, the quality of life of disabled elderly people is likely to be enhanced. The ability to complete more of the tasks of daily living heretofore excluded to them represents increased independence and self-reliance. Additionally, medical examinations can be very stressful for elderly people. If the experience is less noxious, patients are less likely to hesitate to seek further assistance if their vision decreases.

Limitations of the Study

Since this study is limited to a sample of elderly patients with low vision, generalization is limited to similar persons. All participants were English-speaking retirees undergoing a low vision examination in a clinical hospital setting. The results of this study may be generalized only to similar populations.

Definitions

1. Visual impairment is the range of visual acuities from 20/70 to 20/1,000 in the better eye and/or reduced visual fields (Morse & Friedman, 1986).
2. Coping style is the "cognitive and behavioral efforts necessary to manage environmental and internal demands and the conflicts among them" (Feuerstein, Iabbe, & Kuczmierczyk, 1986, p. 162).
3. Elderly is a person over the age of 65 years.
4. Relaxation exercise is a standardized exercise read from a script

focusing on muscle groups and progressively releasing tension from the body.

5. Supportive counseling is an individual counseling session of 20 to 30 minutes focusing on any concerns regarding the low vision examination process or living with low vision.
6. Preparatory information is detailed information about the procedures used in a low vision examination, including the stages of the examination, procedures used, and rationale of the clinic.
7. Repression is a defensive reaction to stress characterized by denying or minimizing threat, reluctance to verbalize feelings of anxiety, and avoidance of thoughts of the threatening situation (Bell & Byrne, 1978).
8. Sensitization is a defensive reaction to stress characterized by obsessive ruminations, hypervigilance to potential threat, facile verbalizations of feelings of anxiety and fear, and attempts to control by dwelling on possible consequences (Bell & Byrne, 1978).
9. Low vision aid is any device such as corrective lenses or magnifiers that provides either better acuity or the ability to accomplish skills of daily living.
10. Low vision is a middle range of visual acuity assuming normal vision is at one end and blindness at the other. Activities of daily living are compromised and adjustments must be made to accommodate the decrease in visual acuity.
11. Visual acuity is the relative ability of the eye to resolve detail.

Questions to be Answered

This study is designed to investigate the potential benefits of psychological interventions in low vision rehabilitation, specifically in optometry. It is commonly agreed that the emotional reactions of an elderly person with a visual impairment play an important role in overall adjustment and the ability to cope with the stress associated with poor vision; however, there is relatively little research on the psychological reactions to low vision, and the low vision examination. The area is ignored, because most research is from optometry and the focus and training of the researchers is not psychological in nature. With the addition of a psychological intervention, the low vision examination is expected to be more effective.

Performance and cooperation are integral parts of a low vision examination, but during the examination process itself many elderly patients are too tense and anxious to discuss and readily understand new information. This study is designed to intervene in this process by preparing patients for the examination by decreasing their anxiety. When more relaxed, elderly patients are expected to perform better and focus their attention more on the examination.

Visual acuity is a dependent variable chosen as an indicator of performance. Since the lenses and prescribed low vision aids are based on the results of visual acuity tests, this variable is critical to the success or failure of a low vision examination. Tests of visual acuity are in part tests of perception, and research has demonstrated that psychological interventions can improve performance on similar tests.

Therefore, it is expected that the interventions will positively effect visual acuity measures.

This study is also designed to improve the use of low vision aids, the second dependent variable. Logically, if a person is somewhat relaxed and able to participate during the examination, he/she will better understand the use of the vision aids and feel more comfortable learning to use them. An increased use of low vision aids is a key to the success of a low vision examination.

Coping style is tested to determine whether this personality variable affects the results of the low vision examination. Theoretically, the healthiest coping style is somewhere in between the two extremes of repression and sensitization. However, for a stressful examination, it is arguable that a repressive style is desirable for success; to pay less attention to the stress decreases feelings of anxiety, and increases the ability to focus on the tasks that are presented to the patient in the examination. It is expected that sensitizers will be overwhelmed and unable to benefit from the experience, and that repressors will be more likely to perform better on tests of visual acuity and benefit from the use of low vision aids.

The psychological interventions are designed to prepare the patient in as brief a time as possible to perform optimally during the examination. The preparatory information treatment provides basic information about what to expect during the examination. This method is implemented because research has shown it to be effective and commonly used in anxiety reduction in stressful medical situations and it is easy to administer. The other psychological treatment addresses not only the cognitive aspects as

in the preparatory information only condition, but the emotional and physical nature of the individual as well. The preparatory information is given accompanied by supportive counseling. The counseling session provides support to the patient and allows the expression of feelings and the exploration of fears and expectations associated with the low vision examination. Individuals with visual impairments often find it difficult to discover a forum for expressing the difficulties associated with a chronic illness; medical personnel, family, and friends do not want to listen to the negative feelings and problems that arise. The relaxation exercise provides physical relief of any tension associated with a lengthy visit to a hospital clinic. The no treatment control condition represents what is currently done at the low vision clinic and serves as a point of comparison. It is expected that both psychological interventions will be effective. However, the more intensive psychological intervention is expected to provide the most benefit.

Hypotheses of the Study

This study will test the following hypotheses:

Hypothesis 1.—A stress-reducing psychological intervention will improve visual acuity performance during a low vision examination.

Hypothesis 2.—A stress-reducing psychological intervention will increase the use of low vision aids following a low vision examination.

Hypothesis 3.—A stress-reducing psychological intervention will reduce state anxiety level during a low vision examination.

Hypothesis 4.—Subjects with a sensitizer coping style are more likely to have a higher state anxiety level during a low vision examination than are subjects with a repressor coping style.

Hypothesis 5.—Subjects with a repressor coping style are more likely to use newly prescribed low vision aids than are subjects with a sensitizer coping style.

Hypothesis 6.—Subjects with a repressor coping style are more likely to perform better on tests of visual acuity than subjects with a sensitizer coping style.

Hypothesis 7.—Subjects reporting lower trait anxiety levels are more likely to use newly prescribed low vision aids than subjects reporting higher trait anxiety levels.

Hypothesis 8.—Subjects reporting lower trait anxiety levels are more likely to perform better on tests of visual acuity, than subjects reporting higher trait anxiety levels.

CHAPTER II

REVIEW OF THE LITERATURE

This section begins with a discussion of chronic illness and coping, followed by a review of four conceptual models of coping. Relevant intervention strategies in the area of stressful medical examinations are compared, as are studies that support or conflict with current theory. A discussion of the psychological instruments used in this study is followed by descriptions of the terminology appropriate to the field of low vision. The prevalence, history, and other factors associated with low vision are also detailed.

Chronic Illness and Coping

A person with a chronic illness faces many personal challenges. Financial problems may result from expensive medical treatments, time lost from work, or the added cost of hiring others to perform tasks previously accomplished by the person. Chronically ill persons find themselves dependent upon health care professionals or family members in a way that is new and often distressing. These changes in degree of independence and alterations in skills require the modification of well-formed and relatively stable self-concepts. In addition, personal attributes, such as personality and self-esteem, may be altered dramatically, and family problems often arise as typical roles are reversed, placing new pressures within the family system (Levy, 1979).

The impact of a chronic illness is experienced on an affective, as well as a physical, level. Depression, the emotion most often associated with chronic illness, occurs in response to a loss or a threat of a loss of strength, energy, sense of well-being, or freedom. The degree of depressed mood is often severe, with suicidal ideation being a frequent concomitant of chronic illness. Anxiety is experienced in many situations as a response to an impending threat, either real or fantasized. In the face of strong negative feelings, defense mechanisms may be strained or entirely nonfunctional, and a person then becomes immobilized and overwhelmed. Other psychological responses to chronic illness may include uncooperativeness, which can be linked to depression, anxiety, or even delirium (Levy, 1979).

Moos and Tsu (1977) have provided a conceptual framework of the adaptive process in chronic illness by dividing adaptation into major task areas that are generally encountered with every illness. Dealing with discomfort and with the stress of special treatment procedures represents the initial task of adaptation, while developing and maintaining adequate relationships with medical staff and other care givers is another adaptive task. It is not uncommon for persons with chronic illness to become withdrawn and self-focused. Maintaining satisfactory social relationships is a personal challenge, especially when a person is depressed or anxious. Another set of tasks includes preserving emotional stability while managing negative moods aroused by the illness, maintaining an adequate self-image, preserving a sense of competency and mastery in life, and maintaining an adequate support system of family and friends. The final task is to prepare for an uncertain future in which significant

losses may be inevitable. Ironically, new medical procedures which provide hope can now make this task more difficult. Ambiguity and uncertainty arise when there is a possibility for a reversal or a health improvement. Balancing hope and a realistic evaluation of the situation can be very stressful (Moos & Tsu, 1977). The relative importance of these tasks varies widely depending on the nature of the disease, the personality of the individual, and the unique environmental circumstances. For example, the physical discomfort may be minor to a person newly blinded, while the difficulties of restoring social relationships is a major area of adaptation.

Coping behavior requires the delicate balance of responding to the requirements of the external situation while maintaining internal emotional equilibrium. Coping skills are used to make these adjustments, and can be either intellectual, emotional, or behavioral. The term "skill" is used to denote a behavior that can be learned, which may be adaptive or maladaptive depending on the situation. Moos and Tsu (1977) define seven areas of coping skills and note that coping is a complex and dynamic process and does not fit into rigid categories; one or more coping skills may be used simultaneously to deal with the complex demands of a situation.

Denying or minimizing the seriousness of the immediate situation is the first skill area. When confronted with a negative diagnosis or the significance of the chronic illness, denying or minimizing the threat can be helpful in lessening the devastation. These self-protective responses to stress are often called "defense mechanisms," but it is important to note that defense mechanisms have a constructive value in the coping process. Defenses give a person time to garner other personal resources

and to deal with negative information in manageable amounts. The second area of coping skills involves the gathering of information and the use of intellectual resources. Information assists in the understanding and decision-making process regarding treatment and encourages emotional well being. Adequate information can often relieve anxiety caused by uncertainty or misconceptions. The third area of coping skills involves requesting reassurance and emotional support from concerned family, friends, and medical personnel. Moos and Tsu state that patients should be encouraged to express their feelings and thereby relieve tension and open themselves up to comfort and reassurance. The fourth skill area involves learning specific, illness-related procedures. This provides confirmation of personal ability and effectiveness, and promotes independence and meaningful action. For example, diabetes mellitis sufferers who learn to control their blood sugar levels through the intake of insulin, careful diet, and exercise experience the benefits of regaining personal control as well as maintaining balanced health. The fifth set of coping skills relates to setting concrete, limited goals. This often gives patients something to look forward to and a realistic chance of mastering a meaningful goal. Many of the tasks associated with a chronic illness can be overwhelming. Breaking the problems into manageable concrete goals is a way of regaining self-control and a feeling of competence. Rehearsing alternative outcomes is the sixth coping skill area. This includes mental preparation and the discussion of various alternative outcomes with others. A person with a chronic illness faces the challenge of trying to handle expected or unexpected difficulties by thinking through all possibilities and by acquainting themselves with the demands

that may be placed upon them. The seventh and final coping skill area concentrates on the process of building on one's previous success at handling difficult problems and finding a general meaning for events (Moos & Tsu, 1977).

Conceptual Models Of Coping

Undeniably, medical procedures can be very stressful. As mentioned in the previous section, medical procedures represent one of the major stressors associated with chronic illness. Research in this area has focused on individual coping processes. Numerous studies have examined the relationship of affective responding, coping style, and outcome in stressful medical examination (Cohen & Lazarus, 1979; Gil, 1984; Johnson & Leventhal, 1974; Pickett & Clum, 1982). No studies were found that examine the emotional reaction to a low vision examination, so it is necessary to broaden the search for relevant studies. Numerous studies have been conducted on reactions to stressful medical procedures. The following section will review four of the most popular conceptual models of coping in stressful medical examinations.

Work Of Worry Model

One of the first and most often cited studies is that of Janis (1958), which examined the relationship of fear and postoperative recovery. Janis theorized that each individual must undergo the "work of worrying" in order to cope effectively with a stressful situation. In other words, an optimal level of fear is necessary to evoke cognitive strategies which are inner defenses that deal with external stressors. Mental rehearsal is a by-product of the arousal stage: when a person worries over a situation, he/she rehearses the outcome and thus creates more reasonable

expectations. Accordingly, if a certain level of fear is not triggered, unrealistic expectations will develop, resulting in anger and disappointment. In the original study, subjects were given preparatory information prior to a surgical procedure. Results of this study showed that subjects given the advanced preparations scored better on various outcome measures. Janis hypothesized that the positive outcome for the treatment group was due to the advance information stimulating fear and suggested that a curvilinear relationship existed between fear and response during a stressful medical examination.

Although a study done by Auerbach (1973) supports Janis' curvilinear theory, most other studies suggest a linear relationship (Millimet & Cohen, 1973; Tempone & Lamb, 1967). There are also some conceptual problems with Janis' model: no differentiation is made between fear and arousal, and fear is treated as a causal factor for the curvilinear relationship. As the relationship is based on correlational data, clearly a causal connection is not justified (Gil, 1984).

Parallel Response Model

A second theoretical framework for coping that has received considerable attention is the parallel response model. In this model, stressful situations create two types of reactions simultaneously: affective responses, which include cognitive and autonomic behaviors as well as overt behavior, comprise one level of response, and danger-oriented behaviors, which include instrumental behaviors, are also triggered. These two reactions are conceptualized to be independent of each other. Emotion is viewed as a response to cognitive appraisal, rather than the reverse, as postulated in Janis' model. Johnson and Leventhal (1974)

investigated the parallel response model in a study of 48 endoscopy patients. The endoscopy procedure involved some discomfort and required cooperation from the patient. In this study, the patient was conscious while a tube was inserted down the throat and into the gastro-intestinal tract. Four groups were compared; a preparatory information group, a behavioral instruction group, a group receiving a combination of the two interventions, and a control group. Emotional and instrumental responses were dependent variables. Results of the analysis indicated that the preparatory information group requested less tranquilizers, had a lower pulse rate, and reduced gagging. Tube insertion time was not affected. The combination group had reduced gagging, a stable pulse rate, and a shorter tube insertion time, but the measure of drug use was equivocal. Findings in this study support the use of both behavioral and preparatory information procedures to decrease the distress- and danger-oriented responses associated with a stressful medical procedure. This study supports the idea that there may be parallel responses occurring simultaneously.

Cognitive Coping Model

The cognitive coping approaches, which have received extensive attention in the literature, are the third conceptual model. In this model, coping is not a simple cause and effect relationship as demonstrated by many research projects (Cohen & Lazarus, 1979; Gil, 1984; Lazarus, 1974; Meichenbaum, Turk, & Burnstein, 1975; Scott & Clum, 1984). Coping responses may not only follow affective responses, but may also precede them and thereby influence the form and intensity of the reaction. The individual appraisal of the situation is the determinant of both

affective behavior and coping responses. The appraisal of stress depends upon both the assessment of the threat and the utilization of coping resources. Meichenbaum (1977) studied the internal dialogue, or self-talk, and cognitive reactions to stress and coping. For example, sweaty palms and muscular tension, once interpreted as signs of stress, are now reappraised as cues for coping techniques. In other words, the individual has learned to respond to the same physiological cues with different cognitions. Cognitive appraisal is the pivotal process. Each person obtains feedback from his/her own reaction and from cues in the environment. Basically, Meichenbaum employs behavioral therapy techniques to the modification of cognitions. The problem with the cognitive appraisal model is one of verification: exactly what mechanisms are involved is only conjecture, and coping is not a simple cause and effect relationship. Coping responses do not necessarily follow affective responses, but may precede them and thereby influence them in form and intensity (Lazarus, 1974).

The following example illustrates the impact of cognitive appraisal in a stressful medical procedure. Drew, Moriarty, and Shapiro (1968) compared general surgical patients undergoing a variety of procedures from dental to open heart surgery and involving all levels of anesthesia, to persons undergoing detached retina surgery to examine extraphysiological factors governing drug use. Sympathetic drugs such as tranquilizers were used as an indicator of distress. The photocoagulation procedure for the reattachment of the retina was chosen because it is a relatively painless operation that is associated with high levels of anxiety and distress; the outcome is unknown, and there is a threat of

loss of vision. Results of this study show that the less painful procedure was associated with higher drug use, more distress symptoms, and higher anxiety for patients than were the more extensive surgical procedures. A plausible explanation is that the ophthalmological patient appraised the situation as highly threatening and therefore reacted with higher symptoms of stress. This study shows the importance of both the circumstances and the individual interpretation of a situation.

Another major area in the cognitive approaches research has been directed at isolating individual differences or coping styles. The intrapsychic mechanisms of coping are conceptually similar to the defenses described in psychodynamic theory. Coping styles protect the ego against conflict. Denial-like processes have received wide attention in the literature (Byrne, Barry, & Nelson, 1963; Cohen & Lazarus, 1979; Gil, 1984), and the results are mixed. There is general agreement on the importance of coping style in mediating between stimulus and response, but there are few guidelines in contemporary theory for predicting a relationship between a particular coping style and adaptation to the arousing stimulus. It is common to distinguish between the coping processes which are in response to stress, and coping styles which are persistent personality traits (Cohen & Lazarus, 1979). Coping response patterns are often divided into two general classes: avoidance of the threat, or repression, and approach of the threat, or sensitization. These processes are referred to as coping styles.

Cohen and Lazarus (1979) conducted an investigation of the influence of coping style on postoperative recovery which typifies the research in this area. Sixty-one general surgical patients were assessed for a

variety of dependent variables, including days of hospitalization, number of pain medications, number of complications, and negative psychological reactions. Subjects were divided by coping style into two groups, repressors or sensitizers. The results indicated that the sensitizer group developed the most complications and had a longer recovery period. The repressive group had the best postoperative results. This study supports the concept that coping style plays an important part in reaction to a stressful medical procedure.

Control Model

Control theories represent the fourth conceptual model. There are many types of control that have been discussed, such as behavioral control, direct action control, and cognitive control. The various control models conceptualize that control (the feeling or perception of mastery over any given situation) is needed to avoid anxiety. There is no simple relationship between stress and personal control.

Kanfer and Goldfoot (1966) conducted some of the initial work in laboratory self-control studies. The effectiveness of different types of control over an aversive stimulus were compared. Cold pressor tests were conducted on four groups. In one group, a negative set was emphasized regarding the aversiveness of the situation which was hypothesized to enhance the negative uses of the stimulus. In the second group, the distraction method of talking was employed. The third group used another distraction method by focusing on the clock in the laboratory. In the fourth group, a slide projection was used as the distractor. The effectiveness of each intervention was measured by the time the subjects were able to tolerate the noxious cold stimulus. The environmental distractors,

such as the slide show, were the most effective in increasing the amount of time the cold water was tolerated. The first condition was the least effective.

Fuller, Endress, and Johnson (1978) examined the effects of cognitive and behavioral control for women undergoing a routine gynecological examination. Previous research provided general preparatory information regardless of the nature and intensity of the situation. In this study, cognitive control, or the way a potentially harmful event is interpreted, was assessed by comparing detailed information of the sensations and experiences which typically accompany a routine pelvic examination to general but relevant health education information. Behavioral control, or the avoidance of an aversive stimulus, was assessed through comparison of abdominal relaxation instruction versus no treatment control. The experiment consisted of a 2 x 2 factorial design. Results indicated that the sensory information group showed less distress as measured by pulse rate and overt behavior. There was no effect regarding fear for the cognitive control group. No significant effects for behavioral control were found. Results suggested that cognitive control emphasizing sensory information limits reactivity and increases the ability to cope with aversive events. A significant finding in this study was that cognitive control, as defined by the type of preparatory information, reduced stress. The lack of significant findings for the behavioral control measure was explained by the possibility that the relaxation training was too brief to establish behavioral control.

Bowers (1968) hypothesized that a lack of control is an antecedent to anxiety. This study investigated whether perceived lack of control

over shock would increase the sensation of pain. Subjects in the study were told that they could either control the shock or have no control over the shock. Subjects who were told that they could control the shock reported less pain even though they actually received more pain from the stimulus than the subjects who were told that they could not control the shock. Bowers concluded that perceived control over a noxious stimulus is an important variable in coping.

Kaplan, Atkins, and Ianhard (1982) extended the control theory into a clinical setting. Patients in the study underwent a sigmoidoscopy, a procedure involving moderate discomfort or mild pain which checks for abnormalities in the colon. The subjects were either instructed to focus on themselves and their own control or on their doctor and external control. After each of the two groups received a relaxation training exercise, the subjects undergoing the self-control strategies reported being less anxious and were observed demonstrating less overt behaviors of discomfort during the procedure. The externally focused subjects had elevated pulse rates, more movement and showed overt symptoms of distress.

Intervention Strategies

While a number of coping strategies relevant to the health care setting have been proposed, it is difficult to compare intervention studies because the severity and intensity of the medical procedures vary and the outcome measures are seldom identical. In addition, the complexity of the construct of coping makes it difficult to evaluate these intervention strategies systematically. The following discussion will examine three common strategies for influencing coping in a medical

setting, including preparatory information, relaxation training, and psychological support.

Preparatory Information

With a few exceptions, recent research has demonstrated that preparatory information prior to medical procedures improves affective responding, decreases length of hospitalization, and decreases use of medications (Gil, 1984; Johnson & Leventhal, 1974). While other variables are more equivocal, Pickett and Clum (1982) noted that cognitive distraction has been used to reduce postsurgical anxiety. This study investigated whether treatment strategies can be tailored to reduce pain and anxiety. Subjects were 59 gallbladder patients placed into one of four groups, a cognitive distraction group, a relaxation training group, a relaxation instruction group, or a control group. Cognitive distraction, which included preparatory information regarding surgery, distraction techniques, and exposure to the stressor in the imagination, was the most successful treatment in the reduction of postsurgical anxiety. This approach, however, contained several different elements, each or all of which could have resulted in reduced anxiety. None of the treatments affected postsurgical pain.

Scott and Clum (1984) conducted an investigation that compared the use of preparatory information with relaxation training. The repression-sensitization coping style was assessed. The purpose of this study was to investigate strategies for reducing pain and anxiety, and to study the interaction of coping styles with treatment. Subjects were placed into one of four groups: a preparatory information group, a relaxation training group, a combination of the two treatment groups, and a control group.

The State Trait Anxiety Inventory was used to measure anxiety and the McGill Pain Questionnaire assessed pain. Coping style was rated using a structured interview for repression-sensitization developed by Cohen and Lazarus (1973). Analgesic use was another dependent variable. There were no main effects for the use of preparatory information, relaxation training, or a combination of the two. However, coping style was a significant variable: sensitizers who received relaxation training reported using less analgesics, and had decreased pain and anxiety, while repressors did not benefit in any consistent fashion. The brevity of the exposure to the treatment was proposed as an explanation for the unexpected results, and the authors concluded that coping style does influence reaction to stressful medical procedures.

Andrew (1970), in a frequently cited study, used preparatory information to improve recovery from surgery. Coping style was measured along the repression-sensitization dimension; the continuum was divided into three parts with repressors and sensitizers being at the extremes and neutrals in the middle. Dependent variables were concerned with recovery outcome including use of analgesics, anxiety reduction, and length of hospitalization. After receiving instructions, repressors required more pain medications, sensitizers showed no difference, and the neutral group improved the most by recovering in less time, with fewer medications and reduced anxiety. It was concluded that personality variables are important in assessing whether the treatment process will benefit an individual patient. In the study, surgical patients whose preferred coping style was sensitization were expected to welcome information about the impending stress. Sensitizers showed no anxiety reductions, perhaps because they

had already rehearsed possible outcomes. Repressors, on the other hand, may have experienced anxiety as a result of the intervention. Neutrals had the highest anxiety and, therefore, the reduction in anxiety was more pronounced. The results of this study support the idea that the recovery from surgery could be influenced by a brief psychological intervention.

Johnson (1973) conducted a series of laboratory experiments to examine the type of preparatory information that reduces the emotional and physical response to pain and why it is effective. Two types of preparatory information were tested; relevant information defined as detailed sensory information about the probable physical discomfort, and irrelevant information defined as general procedural information. Typically, pain and distress are measured as a single dimension in clinical experiments. However, in this study, pain and distress were measured separately to analyze the distinction between physical and emotional reactions to stress. It was concluded that the detailed sensory information was more effective in reducing the sensation of pain and the reported level of distress because there was little difference in the expectation and experience of the event. Many studies have shown similar effects for the use of preparatory information of a more detailed nature (Cohen & Lazarus, 1979; Johnson & Leventhal, 1974; Ley, 1977; Shipley, Butt, Horwitz, & Farbry, 1978). Andrew (1970) found some detrimental effects for preparatory information for repressors, but in general, research findings support a positive effect of preparatory information. Most intervention studies of stressful medical procedures have a primary focus in preparatory treatment strategies.

Relaxation

Relaxation training has been used in a variety of areas, including dental treatment, surgical treatment, and preparation for a stressful medical examination (Gil, 1984). Benson (1977) has shown positive effects of relaxation training in the control of high blood pressure and in reducing discomfort during childbirth. Lamb and Strand (1980) conducted a study of the efficacy of relaxation training for reducing dental anxiety. Following a relaxation training exercise, the State Trait Anxiety Inventory was given as a pretest and posttest measure. Results of the study showed a marked decrease in state anxiety for patients undergoing a dental treatment following the relaxation training exercise, while trait anxiety was not affected.

Mogan, Wells, and Robertson (1985), in a replication of an earlier study done by Flaherty and Fitzpatrick (1978), examined the effects of relaxation on postsurgical pain and distress. Affective responding was measured in terms of anxiety and generalized distress, and postoperative physical outcome variables included incision pain, use of analgesics, and vital signs. The experimental group was taught a relaxation exercise on the evening prior to surgery, and the control group received equal time though no treatment was taught. Results indicated that the experimental group showed a postoperative reduction in stress and anxiety. The postoperative physical measures were not affected by the training.

Relaxation training has not always been a clearly demonstrated effective treatment. Kaplan, Metzger, and Jablecki (1983) compared cognitive and relaxation training for patients undergoing a stressful medical procedure known as electromyography, a procedure that involves the painful

insertion of needles accompanied by shocks to different muscle groups. Four groups, a cognitive training group, a relaxation training group, a combination treatment group, and a control group, were compared by physiological, observer-reported, and self-reported distress measures. The three treatment groups tolerated the stressful procedure better than the control group. No one treatment emerged as optimal; therefore, results of this study were equivocal.

Rice, Caldwell, Butler, and Robinson (1986) found relaxation to have no effect on reducing anxiety and distress during a cardiac catheterization process. Anxiety and distress were measured by self- and observer-report. Patients were observed prior to, during, and after catheterization. Subjects that received relaxation training did not show less anxiety as measured by the State Trait Anxiety Inventory, nor were they observed to be less distressed during the procedure. In a posthoc interview, experimental subjects did not report a decrease in distress during the procedure.

Psychological Support

A patient facing a chronic illness may readily sink into withdrawal, a sense of isolation, and loneliness. When the disease is expected to worsen, the sense of isolation increases. Professional intervention is most effective in the early stages (Halligan, 1983). It is important for health care providers to understand that a person needs an opportunity to experience the effect of the diagnosis and to comprehend and anticipate what is to follow. It is commonly asserted that caregivers should be aware of the emotional needs of patients and family members and give emotional support which contributes to a return toward a healthy sense of

self-esteem (Bunn & Clarke, 1979; Goldenson, Dunham, & Dunham, 1978; Jose, 1983).

Research in the area of brief supportive counseling in combination with a stressful medical procedure is limited. Gruen (1975) showed that patients receiving daily therapy improved at a more rapid rate. Langer, Janis, and Wolfer (1975) compared two stress-reducing strategies: cognitive reappraisal techniques and preparatory information plus reassurance counseling. The results showed that both treatment approaches were effective in anxiety reduction and other physiological measures. Brief supportive counseling is not tested alone, so its effectiveness in anxiety reduction is equivocal in the study.

Results of the many intervention strategies for coping with stressful medical examinations are complex and not easily understood. There are some general trends that have been demonstrated in the research. For example, preparatory information is generally found effective when the information imparted is of a sensory and very detailed nature. However, the dependent measures of recovery vary from one study to another, making comparisons difficult and/or impossible. Another methodological problem is the choice of subjects. Perhaps classifying subjects into different levels would create more consistent trends; however, it is difficult to classify subjects into different levels of intensity for different procedures. For example, comparing anxiety reduction techniques for cardiac catheterization with dental anxiety may provide methodological comparisons, but realistically the seriousness of the situation cannot be compared.

Anxiety

Many cognitive functions that are affected by stress have been identified, including judgment, memory, perceptual organization, problem solving, and social interaction (Spielberger, 1972). Individuals in stressful situations often do not listen well, do not remember instructions, and seem unwilling or unable to make intelligent use of what they are being told (Welsh & Blasch, 1980). Physiological signs of anxiety may be trembling, shaking, giddiness, confusion, heart palpitations, or perspiration (Welsh & Blasch, 1980).

Performance

It has long been the common belief that tension and stress are detrimental to performance, including both verbal and perceptual performance. The level of anxiety and the difficulty of the task influence performance (Ryan, 1962). Anxiety has been studied across a wide variety of situations. It has generally been shown that nervousness or a strong desire to win can affect the performance of an athlete. Fear of failure or confidence can influence a student's performance on an examination. Moreover, the presence of others who support one's efforts can positively influence success, just as the attention of those who threaten success may detract. The interaction of the emotions, the mind, and the body have been demonstrated in the research. A common sense understanding of these variables seems quite prevalent among low vision care providers, yet little formal research has been done (Welsh & Blasch, 1980).

Campeau (1968) found that high-anxiety subjects in a testing situation produced more task irrelevant responses that disrupted performance. When the threatening situation was removed, performance of the high-

anxiety subjects improved. In an anxiety-provoking situation, persons experiencing high anxiety have difficulty focusing on the relevant aspects of the situation.

Easterbrook (1959) sought to explain the effect of anxiety on learning and performance. The use of cues by highly anxious people was thought to be the critical variable. The greater the anxiety a person experiences, the fewer cues he/she uses to solve problems and make judgments. Bauman and Yoder (1966) extended this theory to explain how anxiety in moderate amounts may assist in learning. They proposed that the reduction in cues tends to weed out those cues that are less relevant and improves efficiency by allowing a less obstructed focus on the most relevant aspects of the situation. This suggests that in a high-anxiety state, people are more focused on protecting themselves rather than on the performance at hand.

Mandler (1968) indicated that any organized activity is helpful in warding off a state of anxiety. A state of anxiety exists when a person is unable to meet the demands being placed on him/her and there is a lack of perceptual resources. The person feels helpless and unable to control stimulation.

Fear and anxiety influence success in other ways; for instance, Ryan (1962) indicated that a small amount of anxiety is important in the learning situation by serving as a motivator. A number of studies have demonstrated that high anxiety contributed positively to the learning of simple tasks (Palermo, 1961; Sassenrath & Knight, 1965). Other studies indicated that in more complex tasks, a lessening of anxiety is helpful for performance (Bauman & Yoder, 1966; Welsh & Blasch, 1980). In a study by

Flaherty, McHugh, McHugh, Willits, and Wood (1976), learning and retention were lower for highly anxious, visually impaired persons in a mobility situation.

Spielberger (1966) has proposed that trait anxiety scores reflect a predisposition to respond with heightened state anxiety to situations involving the possibility of failure or loss of self-esteem. The Stressful Situations Questionnaire and the State Trait Anxiety Inventory were given, and it was predicted that subjects high in trait anxiety would report anticipating greater fears in these situations and not in situations involving physical pain or danger. The subjects rated 40 situations according to the degree of apprehension that they thought they might feel if they were in that situation. The 40 items were inter-correlated and factor analyzed. Of the four factors obtained, the three factors associated with failure correlated significantly with trait anxiety while the fourth factor, involving pain and danger, did not. Differences in performance and learning among subjects who differ in levels of trait anxiety have been found primarily under conditions of failure or ego involvement. It appears that if there were a situation of physical danger there would be no difference between high- and low-anxious people. Trait anxiety did correlate with factors involving speed or classroom participation, social or academic failure, and dating situations. This supports Spielberger's contention that trait anxiety is a measure of the predisposition to respond with heightened state anxiety to nonlife-threatening situations.

Yesavage (1984) conducted a study of elderly persons, mean age 76 years, to determine if relaxation training would assist in improving

memory and recall. As people age, they become less able to recognize names and faces. The State Trait Anxiety Inventory was given to a group of 39 volunteers from a senior citizens center. It was hypothesized that anxiety impedes performance on name and recall tests. Half of the volunteers were taught a relaxation exercise and the other half received no treatment but were given nonspecific information about attitudes towards growing older. Results indicated that the relaxation training group significantly improved on face and name recall after the treatment and showed a marked decrease in state anxiety. These results indicate that relaxation training may enhance the ability of elderly individuals to benefit from memory and similar training programs.

Another relevant area of research concerns test taking in which anxiety has been demonstrated to be a major debilitating factor. Sarason (1959) conducted a study where high test anxious students were divided into two groups. Specific instructions for completion of word perception tasks were given to both groups but the experimental group received reassurance and support. Results demonstrated that the treatment group scored better on the task. Informational, motivational, and cue controlled information were in the instructions. Preperformance information influenced the level of attainment.

Relaxation training has been shown to improve performance for high risk students (Dendato & Deiner, 1986). Stout, Thornton, and Russell (1980) conducted a study comparing biofeedback and relaxation training to assess persistence and academic performance. Subjects underwent a series of sessions in progressive relaxation or biofeedback training. Results demonstrated the biofeedback group showed greater persistence, while the

progressive relaxation group benefited more in terms of academic performance. This study illustrates that relaxation training can influence performance.

Repression-Sensitization

Susceptibility to disease, severity of illness, and speed of recovery are influenced in part by personality variables. Byrne, Steinberg, and Schwartz (1968) examined the relationship between coping style and physical illness. Previous research had indicated that extreme repression had negative physical consequences, therefore, a curvilinear relationship was hypothesized for both repressors and sensitizers with respect to the frequency and the severity of physical illness. Two independent samples of undergraduate students were given the Revised Repression Sensitization Scale and a general health survey. Results showed no support for a curvilinear relationship, but certain items in the health survey were significantly related to repression-sensitization in both samples. Sensitizers indicated greater frequency of emotional problems, heart palpitations, illness in general, visits to physicians, and a greater number of psychosomatic symptoms. In order to control for social desirability, the second phase of the investigation studied observed behavioral differences with regard to physical illness. Extreme scorers on both the repression and sensitization ends of the scale were compared for the number of visits to a university health center for an entire academic year. Male sensitizers sought consultations and treatment significantly more often than male repressors; there was no statistically significant difference for female students. The authors suggest that while there may be no relevant physiological differences in susceptibility to illness

between repressors and sensitizers a difference does exist in the perception and responses to illness.

In a related study, Gayton, Ozmon, Bassett, and Tavormina (1976) examined the relationship of perceived vulnerability to illness and coping style. The Revised Repression Sensitization Scale and a health survey of perceived vulnerability to illness were administered. The researchers were interested in the possible differences in expectations of developing health problems, including heart attack, lung cancer, or obesity. Coping style was divided into repression, sensitization, and neutrals. Sensitizers reported the highest level of perceived vulnerability and no difference was found between repressors and neutrals. Sensitizers reported feeling more vulnerable to illness, being sick more often, and needing more health care than either the repressors or the neutrals. The authors suggest that the relationship demonstrated between sensitizers reporting more illness and seeking treatment is mediated by the expectation of health problems developing, and the inverse relationship would then be assumed for repressors and neutrals.

Both repression and sensitization are modes of defense that represent the extremes and are generally considered maladaptive; however, in some instances, the repressive mode is viewed as being positive (Feder, 1967). Pettingale, Philolitus, Tee, and Greer (1981) conducted a five-year multidisciplinary study of women and breast cancer. Patients were preoperatively matched for biological variables such as malignant tumor mass, to insure comparability, and were then assessed preoperatively, at three months and twelve months postoperatively, and annually for four years for psychological, endocrine, and immunological variables. Patients

were divided into four psychological response groups, based on three-month postoperative evaluations, into deniers, fighting spirited, stoic accepters, and helpless/hopeless. After five years, recurrence-free survival was significantly more common among women whose initial reaction to the diagnosis was denial followed by the fighting spirit classification. This study suggests that the psychological response to a serious physical illness may influence long-term outcome, and illustrates the importance of denial-like processes.

Numerous studies in cardiac rehabilitation have indicated that repression and denial-like processes influence recovery but the process itself is not generally well understood. Studies of patients prior to hospitalization report negative effects of denial primarily due to the postponement of seeking treatment; however, during hospitalization, lower mortality and morbidity have been reported (Shaw, Cohen, Doyle, & Palesky, 1985). Studies have shown deniers return to work sooner, and experience less anxiety, depression, mood disturbance, and physical disability than nondeniers (Stern, Pascale, & McLoone, 1976). Other studies are more equivocal; a negative relationship was demonstrated between denial and medical regime compliance, while another study found no relationship (Croog, Shapiro, & Levine, 1971; Stern, Pascale, & Ackerman, 1977). The diversity of outcomes reflects the complexity of the issues and may be in part due to the variety of definitions and measures used.

The repression-sensitization dimension can be defined as characteristic tendencies to respond to threat either with a pattern of avoidance defenses or a pattern of approach defenses. It is assumed that these defense patterns represent the end points of a unidimensional

repression-sensitization continuum. One of the most reliable efforts to develop a scale to measure this dimension is the Repression Sensitization Scale, a subscale of the Minnesota Multiphasic Personality Inventory (MMPI). The Repression Sensitization Scale is scored in such a way that high scores represent sensitization and low scores indicate repression (Byrne, Barry, & Nelson, 1963).

Since the early 1960's, Byrne's Revised Repression Sensitization Scale has been used widely to operationalize the concept of repression and sensitization. Assessment of repression-sensitization began with perceptual threshold measures in the late 1940's and 1950's. The perceptual threshold measures have been replaced since the development of the self-report measures. Altrocchi, Parsons, and Dickoff (1960) introduced the first Repression Sensitization Scale. This scale was refined and revised by Byrne, Barry, and Nelson (1963). The original 127-item Revised Repression Sensitization Scale quickly became a standard measure for repression-sensitization.

One of the early studies conducted to validate the Revised Repression Sensitization Scale utilized the judgment of nine clinicians. Each clinician was asked to fill out a copy of the scale as they imagined a repressor would. There was above chance agreement on more than 90% of the items consistent with the scoring key. In a follow-up study, repression-sensitization scores of patients were significantly correlated with independent psychiatric ratings of defenses. From this evidence, it was concluded that the scale measures the type of verbal responses that are judged as ego defenses, and that these responses are associated with

observable defenses of psychiatric patients (Byrne, Barry, & Nelson, 1963; Tempone, 1964).

Many studies have focused on the relationship of different subscales of the Minnesota Multiphasic Personality Inventory. There is substantial overlap between the Revised Repression Sensitization Scale and the other scales derived from the Minnesota Multiphasic Personality Inventory. One scale that is often compared with the Revised Repression Sensitization Scale is the Taylor Manifest Anxiety Scale. The correlations between the Revised Repression Sensitization Scale and the Manifest Anxiety Scale are high. This raises doubt about exactly what the Revised Repression Sensitization Scale is measuring. The high correlation was explained originally by pointing to the 29 overlapping items between the two scales. In a study designed to test the validity of this statement, Sullivan and Roberts (1969) correlated the two scales with and without the overlapping items. Golin, Herron, Lakota, & Reineck (1967) previously demonstrated the correlation for the two scales at $r = .91$. With the overlapping items omitted, the correlation was still a relatively high .76. Many other studies have demonstrated the defensiveness anxiety relationship denoted in the Revised Repression Sensitization Scale (Lomont, 1965; Ullmann & McReynolds, 1963; Worchel, 1955). Another explanation is that it may be a measurement artifact (Byrne, Barry, & Nelson, 1963).

Another Minnesota Multiphasic Personality Inventory scale that has been compared with the Revised Repression Sensitization Scale is the Edwards Social Desirability Scale. Since many of the subscales of the Minnesota Multiphasic Personality Inventory also contain social desirability items, it is not surprising that the Edwards scale correlates

highly with subscales like the repression-sensitization subscale. Due to the many psychopathological items embedded in the Edwards Social Desirability Scale, the Marlowe-Crowne Social Desirability Scale, which omits those loaded items, is used more often. Studies have shown that the Marlowe-Crowne Social Desirability Scale correlates with the Revised Repression Sensitization Scale. However, the coefficients are much lower, $-.37$ and $-.39$, which suggests that the Revised Repression Sensitization Scale is partly but not entirely a function of social desirability (Byrne, Barry, & Nelson, 1963; Feder, 1967).

A widespread problem in the study of repression-sensitization is the method of classifying repressors and sensitizers. There is not enough consistency in classification. Studies vary using quartiles, split-half, or arbitrarily selected score values. Still others do not report the method of selection (Chabot, 1973). A subject in one study may be a sensitizer, while in another study, he/she would be a neutral.

In summary, the Revised Repression Sensitization Scale would appear to provide a reliable basis from which to predict individual differences in a wide variety of behaviors that are consistent with the fairly precise notion of what repression-sensitization should mean. Though there are some contradictions in the results to date, this situation is not unusual for a personality measure and it leaves sufficient latitude for researchers to reach different conclusions (Byrne, Barry, & Nelson, 1963).

Low Vision

Definitions

To begin any discussion of low vision, there needs to be a clear definition of terms. Many terms are used to denote varying degrees of

vision loss. In its broadest sense, low vision includes any vision which is less than normal, excluding blindness or the total absence of light perception; at the other extreme is normal or superior vision. In the field of services for the blind and visually impaired, it is common to refer to persons with vision loss as blind if they fall within the legal definition of blindness. This practice has created confusion and misunderstanding both inside and outside the field.

In 1934, the American Medical Association defined blindness as the inability to distinguish light from darkness. Soon after, the Social Security Administration adopted a more functional definition of legal blindness based on ophthalmologic measures. Under this definition, legal blindness is central visual acuity of 20/200 or less in the better corrected eye in which the peripheral field loss has contracted to such an extent that the widest diameter of the visual field is less than 20 degrees (Riley, 1969).

At least 80% of those individuals that meet the criteria for legal blindness have some usable vision. Only 12% of visually impaired persons are blind, with an absence of light perception (Morse & Friedman, 1986). If vision is conceptualized on a continuum with total blindness at one end and perfect vision at the other, the majority of persons fall within the middle range. In recent research, there has been discussion of the need for better and more accurate visual definitions within the visual spectrum. There is confusion concerning the definition of low vision because the term low vision means different things to different people. There is widespread agreement regarding the importance of not limiting the terms and services available to persons who fall within the legal

definition of blindness. Mehr and Freid (1975) define low vision as reduced central acuity or central field loss which, with correction, results in visual impairment from a performance standpoint. Morse and Friedman (1986) define low vision as a range of visual acuities from 20/70 to 20/1000 in the better eye and/or a reduced field of vision. A person with low vision often may not meet the criteria for legal blindness, but may have significant visual disabilities that can limit the ability to perform certain tasks and meet certain expectations.

Prevalence

One of the results of the variety of definitions in the area of low vision is that it is difficult to estimate accurately the prevalence of persons with low vision. Researchers use their own unique definitions resulting in estimates ranging from 400,000 to 1,700,000 (Welsh & Blasch, 1980). In spite of the wide differences in projections, most studies agree on one demographic characteristic: the majority of the visually impaired can be classified as older adults. As many as two-thirds of the visually impaired are 65 years of age or older. Statistics project larger percentages of the visually impaired will be older in future years. Also, the growth in the total number of visually impaired persons is expected (Welsh & Blasch, 1980). Increases in longevity and in the population as a whole explain this phenomenon.

Genesky and Zarit (1986) provide a summary of the incidence of the visually impaired population of the United States as of 1980. Table 1 shows a breakdown of the population by age and visual condition. It is important to note that 1,044,500 or 53.7% of the partially sighted population is estimated to be at least 65 years old. Nearly half of the

Table 1

Summary of National Data on Various Components of the Visually Impaired Population, 1980

<u>Age</u>	<u>PS</u>	<u>PS-LB</u>	<u>LB</u>	<u>LB-FB</u>	<u>FB</u>
0-4	5,500	4,400	1,800	1,100	700
5-19	123,800	99,300	37,500	24,600	12,900
20-44	328,500	263,300	89,700	65,200	24,500
45-64	444,000	355,900	117,200	88,100	29,100
65-74	338,900	271,600	87,400	67,200	20,200
75-84	371,400	297,700	93,100	73,700	19,400
85+	<u>334,200</u>	<u>267,900</u>	<u>82,700</u>	<u>66,300</u>	<u>16,400</u>
Total	1,946,300	1,560,100	509,400	386,200	123,200

Note. From Low vision care in a clinical setting (p. 353) by S. M. Genensky and S. H. Zarit, 1986, In Vision and aging: General and Clinical Perspectives, A. Rosenbloom and M. Morgan (Eds.), New York: Professional Press Books.

Note. PS = partially sighted; PS-LB = partially sighted but not legally blind; LB = legally blind; LB-FB = legally blind but not functionally blind; and FB = functionally blind.

legally blind, but not functionally blind, and the functionally blind population are 65 years or older. Clearly, elderly Americans comprise the majority of categories for serious visual impairment. It is of further importance to note that there is a very large difference in the number of people that are legally blind but not functionally blind. This table indicates the need for the focus in low vision services to shift towards the elderly.

History

In the recent past, visually impaired persons that were not blind were educated, trained, or rehabilitated as though they had no useful vision. Adults were taught mobility techniques which were developed for the blind, with little adaptation for their usable vision. Until the early 1950's, it was widely believed that vision deteriorated with use and the needs for the blind outweighed the needs for the visually impaired. Therefore, the rehabilitation techniques and services developed were created to meet the needs of a blind person; there was no clear cut understanding of seeing with limited vision. The area of low vision has been growing rapidly since the early 1960's. Research in visual perception, optics, education, and rehabilitation services has been a steadily growing area (Welsh & Blasch, 1980).

Factors Influencing Visual Ability

It is clear that the degree of visual impairment only partially determines visual ability. Physical, psychological, and external support factors also influence visual ability. There is an interrelationship between many of these factors; however, the relative magnitude and weight of each factor is difficult to gauge (Jose, 1983; Wild & Wolfe, 1982).

There is a lack of research on the nature of these relationships; most of the research reported to date has been conducted on younger people (Aids to Vision, 1981; Jose, 1983; Welsh & Balsch, 1980).

Physical factors can play a role in a low vision examination process. In general, older patients have infirmities and fatigue more easily than younger patients, which influences their performance. The nature and extent of eye disease is a key concept in understanding visual ability, as is the degree and type of field loss which can influence the use of residual vision. Fluctuating vision is another important physical factor. Like the vagaries of the aging process, fluctuating vision occurs continuously over time and is highly individualized (Mehr & Mehr, 1969).

For the person who has become visually impaired, the focus of psychological adjustment is how the loss of sight has been woven into the fabric of their lifestyle (Oppengard, Hansson, Morgan, Indart, Crutcher, & Hampton, 1984). Motivation plays a key role in the adjustment process. During a low vision examination, an elderly person with decreased motivation will show slow and inaccurate responses, submissiveness, and a lack of interest. On the other hand, some elderly patients approach a low vision examination with excitement, unrealistic expectations and a great desire to perform well. The patient's motivation often declines upon the realization that low vision aids can only enhance residual vision rather than restore vision (Rosenbloom, 1982).

Other psychological factors are also important and personality factors can help compensate for the vision loss (Mehr & Mehr, 1969). For example, if a person has a specific goal to read the newspaper and is willing to work patiently and with determination in conjunction with a

low vision specialist, he/she may be able to overcome a rather severe visual deficit in order to achieve that goal. If a person is easily discouraged, passive, or unwilling to try new solutions, it is difficult to find the means necessary to fill in the gaps left by a vision loss. Undeniably, attitude plays a key role.

The degree of guidance and support received by visually impaired individuals is a factor in their readjustment. Reaction and support of family and friends as well as the rehabilitation personnel influence the adjustment of the individual. Often by the time the visually impaired person goes through a low vision examination, he/she has been through a lengthy process of diagnosis and treatment. It is not unusual for the family and close support system to be worn out; or perhaps the person hesitates to share negative feelings for fear of burdening the support system. Often, at this critical point, a third person can help the individual and the support system work through feelings and changing relationships (Fitzgerald, 1970).

In summary, failure or success in responding to the low vision examination cannot be predicted in advance of the clinical situation (Faye, 1970). Personality factors such as motivation, determination, and the ability to use a support system all influence reaction and adjustment to low vision.

CHAPTER III

RESEARCH METHODOLOGY

This study examined two comparative psychological treatment strategies for improving the results and benefits of low vision examination for elderly patients. Coping style and anxiety level were investigated to determine if a relationship exists between these variables and the outcome of the low vision examination. Various demographic variables were examined as well.

Locale

This study took place at the Bascom Palmer Eye Institute/Ann Bates Leach Eye Hospital Low Vision Clinic. Bascom Palmer Eye Institute is part of the University of Miami Medical School, Department of Ophthalmology. It is located on the campus of the University of Miami's School of Medicine and its medical teaching facility, Jackson Memorial Hospital. Bascom Palmer Eye Institute is a major referral center for the southeastern United States, Central and South America, and other parts of the world. All areas of ophthalmological patient care are provided, including ambulatory, inpatient, adult, child, private, and indigent care. Outpatient clinics, such as the Low Vision Clinic, are busy with over 60,000 patient visits annually. The Low Vision Clinic sees approximately 1,000 patients annually.

Subjects

Subjects were 122 low vision patients over the age of 65, including 79 women and 43 men. In terms of ethnic background, 119 subjects were white and 3 were black. All subjects were English-speaking volunteers who passed a mini-mental status examination and proved physically able to participate. They were solicited by letter and telephone. Of those contacted from the appointment schedule of the Low Vision Clinic at Bascom Palmer Eye Institute, 13 patients refused to participate, 25 were too infirm to participate, and 45 did not speak fluent English. These judgments were made by the researcher.

Subjects received no monetary compensation for participation. However, each volunteer was given a complementary cassette tape of a resource directory of low vision services. Normally, the printed version of the resource directory is provided to each low vision patient. The resource directory is produced by the Bascom Palmer Eye Institute Low Vision Clinic to educate patients about services available in the Dade, Broward, and Palm Beach county areas. Since most patients cannot read print readily, the recorded directory afforded easier access.

Design

The present study utilized a randomized group pretest-posttest design. There were two experimental conditions. Subjects were randomly assigned into a control group receiving no treatment, a group receiving preparatory information prior to the low vision examination, and a third group receiving the preparatory information, a brief counseling session, and a relaxation exercise. Dependent variables were visual acuity, reported use of low vision aids, and state anxiety level. Independent variables were

oping style and trait anxiety level. All variables were treated as interval data.

Due to the possibility of interaction of selection and treatment, a second control group was developed. These nonparticipants were contacted by telephone and only asked to answer demographic questions.

Materials

State Trait Anxiety Inventory

The State Trait Anxiety Inventory Form Y was developed by Charles D. Spielberger in collaboration with R. L. Gorsuch, R. Lushene, P. L. Vagg, and G. A. Jacobs (1983). It consists of 40 items which require responses on a four-point Likert scale. The purpose of the State Trait Anxiety Inventory is to evaluate respondents' specific and general reactions to stressful situations.

The State Trait Anxiety Inventory contains two scales. The first, State Trait Anxiety Inventory-State, consists of 20 statements that focus on how a respondent feels in the immediate situation and evaluate feelings of worry, nervousness, and tension. The second scale, State Trait Anxiety Inventory-Trait, assesses how respondents generally feel in a broader context, and the 20 items on this scale evaluate how people perceive stressful situations.

Reliability measures of test-retest coefficients for the State Trait Anxiety Inventory-State are low, $r = .33$, as would be expected for a measure of transitory stress, and relatively high for the State Trait Anxiety Inventory-Trait $r = .765$. Internal consistency is quite high; the overall median alpha coefficient in the normative sample was .92 for the State-anxiety scale and .90 for the Trait-anxiety scale. Evidence

for the construct validity for the State Trait Anxiety Inventory is provided by comparisons of scores of groups in high and low stress situations. Concurrent validity of the Trait-anxiety scale was demonstrated by high correlations with the Taylor Manifest Anxiety Scale and the IPAT Anxiety Scale, ranging from .85 to .73. Convergent and divergent validities were demonstrated by comparison with other measures of emotional disturbance (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983).

The State Trait Anxiety Inventory has been described as a valid instrument for measuring both state and trait anxiety for sighted people. A study was done to determine if visually impaired persons could validly take the State Trait Anxiety Inventory orally. Half of the subjects took the State Trait Anxiety Inventory in the usual manner and then after a one-week interval took the State Trait Anxiety Inventory orally. The other group followed the same procedure in the reverse order. Test-retest reliability for the State anxiety measure was .73 while the trait anxiety coefficient was .83. These reliability measures were consistent with administration standards. In a second experiment, the State Trait Anxiety Inventory was given and responded to orally. After a one-week interval, the State anxiety coefficient was .71 for men and .77 for women. Trait anxiety reliability was .82 and .88 respectively. Therefore, it was concluded that the State Trait Anxiety Inventory is a reasonable reliable instrument when administered in a standardized manner and orally recited (Mastro, French, Henschen, & Horvat, 1985).

Mini-Mental State Examination

The Mini-Mental State Examination is a short, easy-to-use screening instrument for evaluating persons suspected of some form of cognitive

impairment. It was developed by Marshal F. Folstein, Susan E. Folstein, and Paul R. McHugh (1975). It includes 11 questions and requires only five to ten minutes to administer. Subjects are asked a variety of open-ended questions, such as "What is the date, year, and country?" Secondly, they are required to perform simple cognitive tasks such as counting by seven. Responses are given one-point values and the total is summed at the end.

The Mini-Mental State Examination is reliable on 24-hour or 28-day retest by single or multiple examiners. Reliability using a Pearson Product-Moment coefficient was .887 on 24-hour retest by the same tester on both occasions. When the Mini-Mental State Examination was given 24 hours apart by two examiners, the Pearson Product-Moment coefficient was .827. The scores seem stable. When elderly, depressed, or demented patients chosen for their clinical stability were given the Mini-Mental State Examination twice, on average 28 days apart, no significant difference was found. The Wilcoxon T and the Pearson Product-Moment correlation was .98. In another study, three diagnostic groups were separated from one another. Out of a total possible score of 30, the mean score for patients with dementia was 9.7, depression with cognitive impairment was 19.0, and uncomplicated affective disorder, depressed, was 25.1. The mean score for normals was 27.6. The Mini-Mental State Examination agreed with clinical opinion of the presence of cognitive difficulty, and the scores are dispersed in a manner agreeing with the severity of the difficulty.

Short Repression Sensitization Scale

The Short Repression Sensitization Scale was developed by Paul J. Handel (1973). The purpose of the scale is to measure coping style. The Short Repression Sensitization Scale is an abbreviated form of the Revised Repression Sensitization Scale developed by Donn E. Byrne, James Barry, and Don Nelson (1963). The Revised Repression Sensitization Scale is a subscale of the Minnesota Multiphasic Personality Inventory (MMPI).

Subjects are asked to respond true or false to 43 statements reflecting a continuum of behaviors along the denial or obsessive axis. One point is given to keyed items. A high score reflects a sensitizer response style while lower scores represent the repressive style. A median alpha coefficient of .88 was reported (Paulhus, 1987 personal correspondence with the author). A correlation of .82 ($p < .01$) between the Revised Repression Sensitization Scale and the Short Repression Sensitization Scale was reported by Handel (1973).

Training of the Researcher

The principle investigator was the author, a white female doctoral candidate in the Counseling Psychology program. Previously, the researcher has worked in a medical setting providing testing and evaluation, counseling, and relaxation training. Though aware of the purpose of the research, the researcher did not score instruments, or examine any results until all data were collected.

Procedure

The Bascom Palmer Eye Institute Low Vision Clinic schedules up to 25 appointments per week. Most appointments are scheduled well in advance. The researcher obtained a weekly computerized list from the scheduling

office. The name, address, and telephone number as well as the scheduled appointment were listed. Next, the researcher screened the patients. If the person was over the age of 65, he/she was mailed an introductory letter on Bascom Palmer Eye Institute letterhead. In this letter, the purpose of the study was described, followed by an introduction of the researcher by name and a step-by-step description of the procedure (see Appendix A). Altogether, participation in this study was estimated to take approximately one hour, split into small segments. The recorded cassette directory was mentioned, and the letter concluded with a statement stressing the voluntary nature of the study.

Sometime between receiving the letter and the scheduled appointment date, potential subjects were contacted by telephone. The researcher identified herself and asked if the letter was read, understood, and if the person wished to volunteer for the research study. If subjects answered affirmatively, they were read the consent form and asked to give a verbal approval (see Appendix B). They were told that if they had any questions about the project, the researcher would answer them upon completion of their participation.

First, they were asked general demographic questions such as their age, marital status, and educational background (see Appendix C). Complete listing of this information is reported in Chapter IV. Two questionnaires, the Short Repression Sensitization Scale and the State Trait Anxiety Inventory-Trait Scale, were then administered over the telephone. Instructions were read prior to administration and the responses were recorded.

On the scheduled day, subjects were asked to come 30 minutes prior to their appointment. After checking in at the front desk of the outpatient clinic, all low vision clinic patients were directed to a central waiting area. There were many outpatient clinics in progress at the same time and it is often a busy and noisy area. The front desk then informed the clinic staff of the subject's arrival. The researcher went to the waiting area and called the patient by name. Most patients were accompanied by a friend or family member. The researcher introduced herself to the subject, as well as the subject's companion, and ushered the subject into the low vision clinic examination area. Initially, low vision clinic patients are taken into a room that is designed to resemble part of the home environment. There are comfortable chairs and many home fixtures and appliances, such as lamps, a television, telephones, and a sewing machine. The subject was read the consent form and asked to sign. Most subjects could not see where to sign and were shown by the researcher. Participants were first given the Mini-Mental State Examination. If subjects failed to score adequately on the Mini-Mental State Examination, they were given the recorded resource directory, told that was the end of the research study, and were ushered back to the waiting area. Otherwise, subjects were given the State Trait Anxiety Inventory-State.

Subjects were randomly assigned to one of three groups. In the first group, the control group, subjects were given no treatment. Upon completion of the State Trait Anxiety Inventory-State, they were ushered back to the waiting area. The second group received preparatory information only (see Appendix D). The third group received a more intensive

psychological treatment. The same preparatory information description was read to them and there was a ten to fifteen minute counseling session regarding how they were feeling and coping with their vision loss. Then, they were given a brief relaxation exercise by the researcher which was read from a script (see Appendix E).

The low vision examination began when the subjects were interviewed by the technician in the "living room" environment. They were asked a series of general practical questions about their vision, such as "Can you see the food on your plate?", "Do you drive a car?", and "Can you read a newspaper?" The many low vision aids in this room were then demonstrated. The technician ended her part of the low vision examination by testing visual acuity using eye charts designed for low vision patients. Sometimes, there were delays and subjects and their companions were asked to wait outside until the optometrist could see them.

The next part of the low vision examination took place in the optometrist's office adjacent to the first examination room. This room was traditional in setup, with the patient chair toward the center of the room. The optometrist conducted a low vision examination using regular lenses, magnifiers, and other aids to assist the low vision patient in completing his/her stated goals, usually centering around reading. The examination was very individualized. Following the low vision examination, which lasted approximately one to two hours, subjects completed the State Trait Anxiety Inventory-State again. This was done either in the optometrist's examination room or the "living room," depending on space and availability. The researcher and subject were the only people present. The optometrist, technician, or companions were asked to leave

the room.

Approximately one month after the appointment, subjects were contacted by telephone and asked to report on the success or failure of the prescribed low vision aids. This gave the subject time to evaluate the aids. Subjects were asked to rate the low vision aids on a five-point Likert scale, from very useful to not at all useful. Any questions about the research were answered at this time.

CHAPTER IV

RESULTS

This section of the report presents the results of the statistical analysis undertaken in the present investigation. The study was designed to measure the effects of two comparative treatment strategies for improving the results and benefits of a low vision examination. Coping style and anxiety level were investigated to determine if these independent variables play an important role in the outcome of a low vision examination. Subjects were English-speaking patients of the Bascom Palmer Eye Institute's Low Vision Clinic who were over the age of 65. After passing a mental and physical status evaluation, subjects were randomly assigned into one of three groups. Each participant was evaluated for coping style using the Short Repression Sensitization Scale, and for anxiety level using the State Trait Anxiety Inventory. A control group and two experimental groups were used. In one condition, preparatory information was given prior to the low vision examination. In the other treatment condition, preparatory information, a brief counseling session, and a relaxation exercise were given. A second control group of nonparticipants was employed to reduce selection bias due to the necessary volunteerism required by the clinical setting.

Tests of Hypotheses

The results are presented in terms of the hypotheses as they were stated in Chapter I. The .05 level of statistical significance was

required for the hypotheses to reach statistical significance. Table 2 presents a summary table of the statistical tests.

Hypothesis 1.—It was hypothesized that a stress-reducing psychological intervention will improve visual acuity performance during a low vision examination. Visual acuity was analyzed separately for the left and right eye. The most recent distance visual acuity of each of the 92 subjects was obtained from medical records primarily at Bascom Palmer Eye Institute or from private referring physicians. This was the pretest measure. The distance acuity taken at the low vision examination was the posttest measure. All results were recorded in the commonly-used Snellen notation and then converted into a decimal for ease of comparison. For example, a ratio such as 20/200 was changed to .1.

Analysis of variance was the statistical method used to compare the difference in change of visual acuity for the left eye. The F value was .70, df 2,89, $p < .498$. The means for the three groups (control, preparatory information, and preparatory information, brief counseling, and relaxation exercise) were .008, -.006, and -.021, respectively.

An identical model was conducted for the right eye; F value was .33, df 2,89, $p < .717$. The means for the three groups (control; preparatory information; and preparatory information, brief counseling, and relaxation exercise) were -.026, -.019, and -.016, respectively. The null hypothesis was not rejected. There was no statistical evidence that a stress-reducing psychological intervention improved performance on a test of visual acuity.

Hypothesis 2.—It was hypothesized that a stress-reducing psychological intervention will increase the use of low vision aids following a

Table 2

Analysis of Variance Test of Significance for the Independent Variables
(Treatment Groups, Coping Style, and Trait Anxiety)

<u>Dependent Variables</u>	<u>Mean Square</u>	<u>F Value</u>	<u>df</u>	<u>p <*</u>
<u>Comparison of Treatment Groups With:</u>				
Change of Visual Acuity				
Left Eye	.006	.70	2	.498
Right Eye	.004	.33	2	.717
Use of Low Vision Aids	9.924	6.87	2	.0013
Change in Anxiety Level (State)	798.055	10.74	2	.0001
<u>Comparison of Coping Style With:</u>				
Change of Visual Acuity				
Left Eye	0.0032	.35	1	.55
Right Eye	0.0001	.01	1	.92
Use of Low Vision Aids	4.717	3.11	1	.08
Change of Anxiety Level (State)	5348.888	54.00	1	.0001
<u>Comparison of Trait Anxiety With:</u>				
Change of Visual Acuity				
Left Eye	.0071	.78	1	.38
Right Eye	.0012	.11	1	.74
Use of Low Vision Aids	7.215	4.79	1	.03

* $p < .05$.

low vision examination. A variety of low vision aids, such as special lenses, magnifiers, and telescopes are routinely prescribed during a low vision examination. Success is measured by the use of these special appliances. Shortly after the low vision examination, subjects were contacted by telephone and asked to rate the helpfulness of the new aids using a five-point Likert scale ranging from very useful to not at all useful.

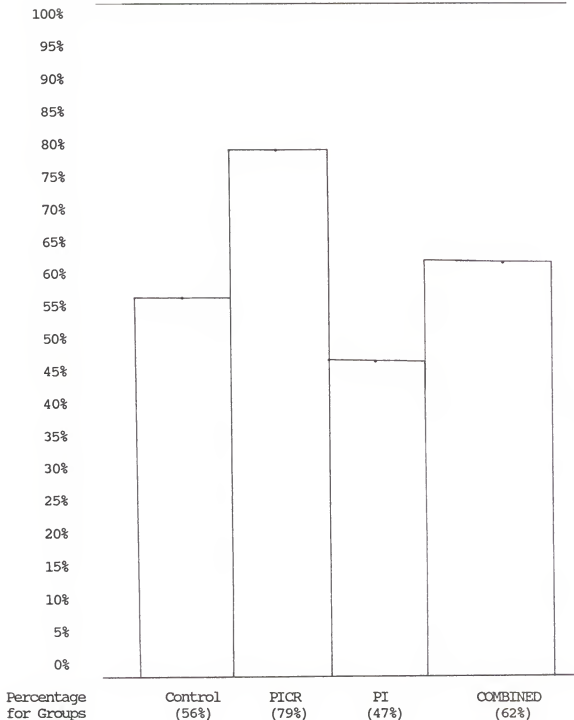
Analysis of variance was the statistical method used. The F value was 6.87, df 2,183, $p < .0013$. Since the p value was less than .05, the null hypothesis was rejected. To identify which intervention was the most powerful, Duncan's Multiple Range Test was used; there was no difference in the control and preparatory information groups. The preparatory information, brief counseling, and relaxation exercise group was statistically different, reporting the highest use of low vision aids. Table 3 and Figure 1 provide information about the reported use of prescribed low vision aids. A total of 186 low vision aids were prescribed; 62% of these aids were somewhat useful or better. The preparatory information, brief counseling, and relaxation exercise group had the highest cumulative total; 78.8% of the prescribed low vision aids were reported as somewhat useful or better. The control group had the second highest cumulative percentage (55.88%); and the preparatory information group reported the lowest score (46.81%). However, the preparatory information group reported that nearly half of the aids prescribed were useful to some degree. Table 3 presents the reported usefulness graphically to illustrate the differences in the use of low vision aids for the three groups.

Table 3

Use of Low Vision Aids by Experimental Groups

	Groups											
	Control			PICR			PI			TOTAL		
			Cumm			Cumm			Cumm			Cumm
	N	%	%	N	%	%	N	%	%	N	%	%
Very Useful	1	1.47	1.47	7	9.86	9.86	7	14.89	14.89	15	8.06	8.06
Moderately Useful	4	5.88	7.35	2	2.82	12.68	0	0.00	14.89	6	3.23	11.29
Useful	22	32.35	39.70	44	61.97	74.65	12	25.53	40.42	78	41.94	53.23
Somewhat Useful	11	16.18	55.88	3	4.23	78.88	3	6.39	46.81	17	9.14	62.37
Not Useful												
At All	30	44.12	100.00	15	21.12	100.00	25	53.19	100.00	25	37.63	100.00
Total	68	100.00	-	71	100.00	-	47	100.00	-	186	100.00	-

Note. PICR = Preparatory information, brief counseling, and relaxation exercise group; PI = Preparatory information group.



Note. PICR = Preparatory information, brief counseling, and relaxation exercise group; PI = Preparatory information group.

Figure 1. Percentage for Each Group and Groups Combined Finding Low Vision Aids "Very Useful" to "Somewhat Useful"

Hypothesis 3.—It was hypothesized that a stress reducing psychological intervention will reduce state anxiety level during a low vision examination. The 20-item State Trait Anxiety Inventory-State was administered as a pretest and posttest to the treatments, and the mean change in anxiety level was compared for the three groups. Figure 2 is a graphic illustration; the preparatory information, brief counseling, and relaxation exercise group showed a marked decrease in anxiety when compared to the other two groups.

Analysis of variance was conducted resulting in an F value of 10.74, df 2,89 with $p < .0001$, thus the null hypothesis was rejected. To identify which intervention was most powerful, Duncan's Multiple Range Test was conducted. The test revealed no statistically significant differences between the preparatory information and control groups, and a significantly higher mean for the preparatory information, brief counseling, and relaxation exercise group, which indicated a significant decrease in anxiety level for this group.

Hypothesis 4.—It was hypothesized that subjects with a sensitizer coping style are more likely to have a higher state anxiety level during a low vision examination than are subjects with a repressor coping style. The State Trait Anxiety Inventory-State was compared to the results of the Short Repression Sensitization Scale. Both variables were continuous, and a simple linear regression was conducted, the F value obtained was 54.00, df 1,90, $p < .0001$, with a slope estimate of 1.03. For every 1.0 increase on the Short Repression Sensitization Scale, there was a 1.03 increase in state anxiety. The null hypothesis was rejected. In order to discover the strength of the association, the Pearson Product-Moment

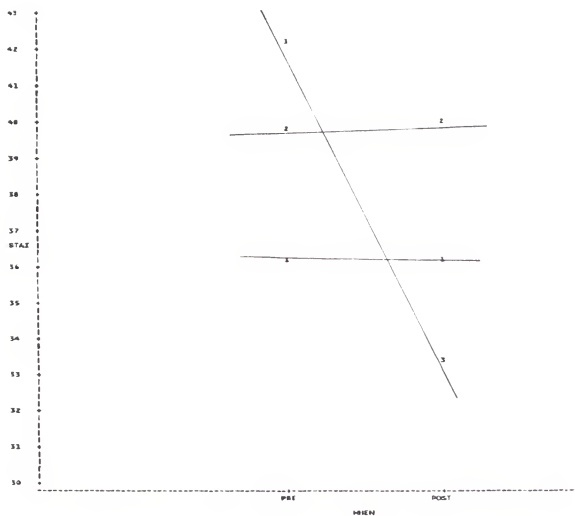


Figure 2. Graph of the Change in State Anxiety Level Before and After Treatment For The Three Groups

correlation was employed, $r = .612$, indicating a moderately strong relationship. Figure 3 presents a scattergram plotting the positive relationship between state anxiety level and the dimension of sensitization. The relationship is consistent with the previously discussed research in Chapter II.

Hypothesis 5.—It was hypothesized that subjects with a repressor coping style are more likely to use newly prescribed low vision aids than are subjects with a sensitizer coping style. Using a simple linear regression procedure, the number of low vision aids assessed as useful was compared to coping style which yielded an F value of 3.11, df 1,184, $p < .08$. The null hypothesis was not rejected, and was further supported by a Pearson Product-Moment correlation, $r = .13$. There was no significant relationship between the use of low vision aids and coping style at the .05 confidence level.

Hypothesis 6.—It was hypothesized that subjects with a repressor coping style are more likely to perform better on tests of visual acuity than subjects with a sensitizer coping style. Visual acuity was analyzed separately for the left and right eye. Simple linear regression analysis resulted in an F value of .35, df 1,90, $p < .55$.

The same procedure was conducted for the right eye, resulting in an F value of .01, df 1,90, $p < .92$. The null hypothesis was not rejected, and there was no evidence of a relationship between coping style and visual acuity. This was further demonstrated by the Pearson Product-Moment correlation coefficient (left eye, $r = -.06$; right eye, $r = -.01$). No notable correlation was demonstrated.

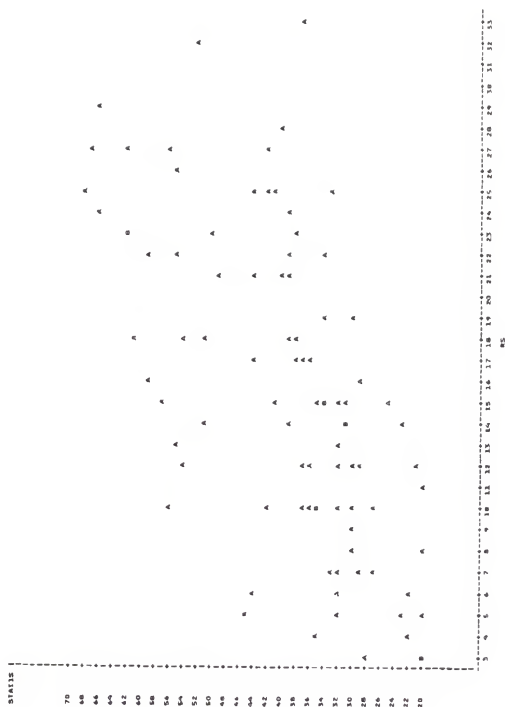


Figure 3. Scattergram Plotting Scores of the Short Repression Sensitization Scale and the State Trait Anxiety Inventory State

Hypothesis 7.--It was hypothesized that subjects reporting lower trait anxiety levels are more likely to use newly prescribed low vision aids than are subjects reporting higher trait anxiety levels. A simple linear regression procedure was conducted which produced an F value of 4.79, df 1,184, $p < .03$. The estimate of the slope was .016, indicating that for every 1.0 increase in trait anxiety, there was an .016 decrease in the use of low vision aids. The null hypothesis was rejected; there was a relationship between trait anxiety and the use of low vision aids. To discover the strength of the relationship, a Pearson Product-Moment correlation was conducted; a very weak relationship was found, $r = .16$.

Hypothesis 8.--It was hypothesized that subjects reporting lower trait anxiety levels are more likely to perform better on tests of visual acuity than are subjects reporting higher trait anxiety levels. As in Hypothesis 1 and 6, visual acuity was analyzed separately for the left and right eye. For the left eye, a simple linear regression model produced an F value of .78, df 1,90, $p < .38$. The results of the right eye were obtained using the same statistical model, producing an F value of .11, df 1,90, $p < .74$. The null hypothesis was not rejected; no significant relationship was found between the two variables. The Pearson Product-Moment correlation procedure results were left eye, $r = -.09$, and right eye, $r = -.03$. There was no evidence of a relationship between visual acuity and trait anxiety level.

Demographic Comparisons

Since it was necessary to solicit volunteers to participate in the present study, a second control group of 30 nonparticipants was compared

to the group of 92 participants to examine for possible selection bias. Demographic comparisons of sex, marital status, age, education, self-reported overall health status, and nature of sight loss were conducted. Tables 4 through 7 summarize these findings. No differences between the participant and nonparticipant groups were found with one exception, age, $p < .031$. The nonparticipant group, $\bar{X} = 79.06$ years, was significantly older than the participant groups, $\bar{X} = 76.22$ years.

Subsidiary Analysis

In order to assess the possible relationships between the use of low vision aids, age, and sex, a two-way analysis of variance was conducted. The results of this analysis are presented in Tables 8 and 9. An interaction effect was demonstrated, $F = 6.38$, $df 1$, $p < .012$. Linear regression analysis revealed a significant relationship for females, age, and the use of low vision aids, F value of 5.40, $df 1$, $p < .021$ and the slope = .491. These findings indicated that for female subjects, low vision aids were less useful as they grow older. Male subjects showed no evidence of age affecting their use of low vision aids. This finding has important implications for the clinical practitioner when prescribing for older women patients.

Table 4

Comparison of Participation by Sex

	Female		Male		Total	
	N	%	N	%	N	%
Nonparticipants	20	16.39	10	8.20	30	24.59
Participants	<u>59</u>	<u>48.36</u>	<u>33</u>	<u>27.05</u>	<u>92</u>	<u>75.41</u>
Total	79	64.75	43	35.25	122	100.00

Table 5

Comparison of Participation by Marital Status

	Single		Married		Divorced		Widowed		Total	
	N	%	N	%	N	%	N	%	N	%
NP	0	0.00	14	11.48	0	0.00	16	13.11	30	24.59
PT	<u>2</u>	<u>1.64</u>	<u>51</u>	<u>41.80</u>	<u>7</u>	<u>5.74</u>	<u>32</u>	<u>26.23</u>	<u>92</u>	<u>75.41</u>
Total	2	1.64	65	53.28	7	5.74	48	39.34	122	100.00

Note. PT = Participants; NP = Nonparticipants.

Table 6

Comparisons of Participants and Nonparticipants

<u>Variable</u>	<u>N</u>	<u>\bar{X}</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p <</u>
<u>Age</u>						
NP	30	79.07	5.85	120.0	2.18	.031*
PT	92	76.22	6.33			
<u>Education</u>						
NP	30	12.17	1.46	103.2	- .62	.536
PT	92	12.42	3.05			
<u>Health</u>						
NP	30	2.93	1.01	120.0	-1.71	.089
PT	92	3.30	1.03			
<u>Gradual versus Sudden Sight Loss</u>						
NP	29	1.14	.35	119.0	-1.98	.050
PT	92	1.33	.47			
<u>Expected versus Unexpected Sight Loss</u>						
NP	30	1.97	.13	90.5	1.83	.071
PT	91	1.88	.32			
<u>Stable versus Unstable Sight Loss</u>						
NP	30	1.50	.51	118.0	1.52	.131
PT	90	1.34	.48			
<u>Year That Sight Loss Occurred</u>						
NP	30	82.47	5.70	90.3	.96	.342
PT	92	81.04	10.23			

* $p < .05$.Note. PT = Participants; NP = Nonparticipants.

Table 7

Comparison of Diagnosis for Participants and Nonparticipants

<u>Diagnosis</u>	<u>PT</u>	<u>NP</u>
Macular Degeneration	68%	76%
Glaucoma	12%	6%
Cataract	5%	6%
Diabetic Retinopathy	8%	6%
Other	<u>7%</u>	<u>3%</u>
Total	100%	100%

Note. PT = Participant, N = 92; NP = Nonparticipant, N = 30.

Table 8

Two-Way Anova Summary Table For Use of Low Vision Aids by Age and Sex

<u>Source of Variation</u>	<u>df</u>	<u>Mean Squares</u>	<u>F Value</u>	<u>p <*</u>
Age	3,182	5.751	.03	.866
Sex	3,182	1.467	5.49	.020
Age*Sex	3,182		6.38	.012*

* $p < .05$.

Table 9

Anova Summary Table For Use of Low Vision Aids by Sex

<u>Source of Variation</u>	<u>df</u>	<u>Mean Squares</u>	<u>F Value</u>	<u>p <*</u>
Male	1,124	7.838	5.40	.022
Female	1,58	3.091	2.06	.157

* $p < .05$.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter, the present study is summarized and conclusions are drawn from the findings. Recommendations for further research are made based on the findings of this study.

Summary

This study was designed to examine the effects of two comparative treatment strategies for improving the results and benefits of a low vision examination. Coping style and anxiety level were investigated to determine if these independent variables play an important role in the outcome of a low vision examination. The subjects volunteering for this study were elderly patients undergoing a low vision examination at the Bascom Palmer Eye Institute, Miami, Florida. Subjects passed a mental and physical status examination, answered demographic questions, and were administered the Short Repression Sensitization Scale and the State Trait Anxiety Inventory. To investigate the efficacy of the two treatment strategies, subjects were placed into one of three groups. Prior to the low vision examination, one group received preparatory information only; the second group received a more comprehensive psychological intervention, consisting of preparatory information, a brief counseling session, and a relaxation exercise; and the third group received no treatment and served as a control. The three dependent variables—visual acuity, use of low vision aids, and anxiety level—were compared for the two treatment

groups and the control group. A second control group of 30 nonparticipants was employed to control for possible selection bias. Demographic comparisons were made between the 92 subjects in the participation group and the 30 subjects in the nonparticipation group.

Statistical procedures employed were analysis of variance, two-way analysis of variance, Pearson Product-Moment correlation, Duncan's Multiple Range test, and the t test for independence. Alpha was set at the 5% (.05) significance level.

Review of the Hypotheses and Findings

It was first hypothesized that a stress-reducing psychological intervention will improve visual acuity performance during a low vision examination. Visual acuity was analyzed separately for the left and right eye. Analysis of the data supported the null hypothesis; there was no statistical evidence that a stress-reducing psychological intervention improved performance on a test of visual acuity.

The second hypothesis stated that a stress-reducing psychological intervention will increase the use of low vision aids following a low vision examination. The treatment group receiving the preparatory information, a brief counseling session, and a relaxation exercise reported a statistically significant increase in the usefulness of the low vision aids prescribed to them when compared with the other two groups.

The third hypothesis stated that a stress-reducing psychological intervention will reduce state anxiety level during a low vision examination. The group receiving preparatory information, a brief counseling session, and a relaxation exercise had the highest mean, indicating there

was a statistically significant decrease in state anxiety level before and after the intervention.

The fourth hypothesis stated that subjects with a sensitizer coping style are more likely to have a higher state anxiety level during a low vision examination than are subjects with a repressor coping style. The null hypothesis was rejected; a moderately strong relationship was demonstrated between the two variables.

The fifth hypothesis stated that subjects with a repressor coping style are more likely to use newly prescribed low vision aids than are subjects with a sensitizer coping style. Analysis of the data indicated that no significant relationship existed between these two variables.

The sixth hypothesis stated that subjects with a repressor coping style are more likely to perform better on tests of visual acuity than are subjects with a sensitizer coping style. Visual acuity was analyzed separately for the left and right eye. Analysis of the data revealed that there was no evidence of a relationship between visual acuity and coping style.

The seventh hypothesis stated that subjects reporting lower trait anxiety levels are more likely to use newly prescribed low vision aids than are subjects reporting higher trait anxiety levels. Analysis of the data demonstrated that there was a weak relationship between trait anxiety and the use of low vision aids.

The eighth hypothesis stated that subjects reporting lower trait anxiety levels are more likely to perform better on tests of visual acuity than are subjects reporting higher trait anxiety levels. As stated previously, visual acuity was analyzed separately for the left and right

eye. Analysis of the data demonstrated that no significant relationship existed between the two variables.

Since the experimental subjects in this study volunteered, a second control group of 30 nonparticipants was compared to the 92 participating subjects to test for independence. Analysis of the data showed no statistical difference for variables including sex, marital status, education, self-reported overall health status, and nature of sight loss. However, age was statistically significant; the nonparticipant group was slightly older than the participant group.

A subsidiary analysis was conducted to assess the possible relationship between use of low vision aids, age, and sex. Analysis of the data demonstrated an interaction between the two variables, and a main effect for female subjects was statistically significant. The older the female subject, the less likely low vision aids were reported to be useful.

Discussion

The major issue of this study was the efficacy of psychological interventions for improving the results and benefits of a low vision examination. Visual acuity, the use of low vision aids, and anxiety level were the variables that defined success of the low vision examination. The use of low vision aids and anxiety level were improved by the preparatory information, brief counseling, and relaxation exercise treatment. Visual acuity was not affected, and coping style, as measured in this study, was not a significant variable.

The findings from visual acuity tests did not follow any systematic or logical pattern. Instead, there was substantial variance; visual acuity does not appear to be a stable variable. There are many possible

alternative explanations, such as a lack of uniform time between the visual acuity measurements pretest and posttest. Originally, it was estimated that there would be a two- or three-week period between the referral examination and the low vision clinic examination. However, the reality of scheduling in a clinical setting often resulted in an extended period of time lapsing between the two examinations. In an unstable disease process, decline in vision can be rapid (Welsh & Blasch, 1980). Another possible explanation for the variance in visual acuity measures is that multiple examiners tested the subjects under different circumstances. Previously cited research stressed that the attitude of the low vision examiner, as well as the patient, may influence the outcome of a low vision examination (Jose, 1983). However, these possibilities are conjecture; it is impossible to state with any certainty other than chance why visual acuity was an unstable variable.

Coping style, as measured by the Short Repression Sensitization Scale, was not a significant variable also. Perhaps defining coping style using a trait measure is a methodological problem that accounts for this lack of significance. In order to gather data from visually impaired subjects, it seemed expedient to use the briefest personality measure available; the Short Repression Sensitization Scale seemed reliable but the lack of significant results raises questions. The shortened form of the Revised Repression Sensitization Scale may not be sensitive enough to measure coping style.

Research in stress has produced contradictory results, allowing for few replications and the inability to compare studies because of various differences in independent and dependent measures. Also, there has been

a lack of preciseness about the potential effective components of certain psychological interventions used to enhance coping. Many studies use different methods to assess coping style. For example, Scott and Clum (1984) used a structured interview technique to assess coping style, while other studies used paper and pencil tests. It is difficult to compare findings across studies.

Research would be a simple matter if the assessment of a particular coping style would allow us to predict how people would react in different situations. Another possible explanation is the use of a trait measure that underestimated the complexity and variability of coping. The one dimensional nature of repression-sensitization is appealing because of its simplicity, but in reality may not reflect adequately the complex qualities of coping (Lazarus & Folkman, 1984).

The preparatory information, brief counseling session, and relaxation exercise group reported a significantly higher use of low vision aids. This is an important finding, because the purpose of this study was to evaluate a psychological intervention in a low vision clinic, and the increased use of low vision aids is one of the goals of the examination. As has been stated previously, the psychological reactions of the visually impaired are important during a low vision examination (Welsh & Blasch, 1980). The fact that subjects receiving a psychological intervention reported using more low vision aids when compared to both preparatory information only and no treatment conditions supports the importance of psychological interventions in low vision care. Yesavage (1984), who studied the performance of learning and memory of the elderly, found that relaxation training was significant in improving performance. Although

relaxation was only part of the intervention, a parallel can be cautiously drawn for the present study.

State anxiety level was decreased significantly following the preparatory information, brief counseling, and relaxation exercise intervention. Anxiety is an often studied variable in the stress and medical illness literature (Cohen & Lazarus, 1979; Folkman & Lazarus, 1980; Gil, 1984). The positive effects of anxiety reduction are many; reduction in anxiety has been associated with improved listening, better remembering of instructions, and the ability to use information intelligently (Welsh & Blasch, 1980). All of these factors are a positive influence when undergoing a low vision examination.

The research on stress and illness included many intervention studies that compared the efficacy of preparatory information and other intervention strategies. Intervention strategies have not been applied to low vision examinations before so the present investigation was conducted to add to the literature in this area. Preparatory information is a low cost, easy-to-administer intervention that has decreased anxiety and distress in certain medical procedures (Johnson, 1973; Johnson & Leventhal, 1974). Preparatory information alone was not a significant treatment strategy in this study. It is important to note that the results of previous studies of preparatory information have been mixed. Methodological problems hinder comparisons; three common inconsistencies are how the preparatory information was delivered, the influences of individual differences, and the therapeutic milieu (Gil, 1984).

In the current study, the preparatory information, brief counseling, and relaxation exercise treatment had the most impact. Similar

combination strategies have been successfully used in previous studies (Egbert, Battit, Welch, & Bartlett, 1964; Gil, 1984; Pickett & Clum, 1982). Research on preparatory information, relaxation training, and brief counseling as single intervention strategies provided generally favorable results. So, the combination of all three was designed to find the most powerful psychological intervention that was also low cost and brief. The potential cost benefits of different interventions were compared. If the preparatory information only condition was beneficial, less trained and less costly personnel could deliver it. However, the more sophisticated psychological intervention was more effective and the use of this approach would require the utilization of professionals.

Suggestions for Further Research

There are several interesting research possibilities that are perceived as evolving from the present study. Results suggest that it would be beneficial to redefine coping style using a process model. The present study failed to discern information about individual differences and coping during a low vision examination and it may be more productive to approach this problem from a dynamic perspective.

Another research possibility is to refine the definition of performance during a low vision examination and compare individuals within a more discriminating framework. Evaluating the interaction of each part of the optometric examination with specific psychological variables would possibly add to knowledge in this area.

Data collection for this study occurred over a six-month period. During this time, the researcher observed day-to-day occurrences in the low vision clinic. The awareness and attitudes of the optometrists

conducting the low vision examinations is a potential research area. For example, it would be illuminating to compare elderly patients' self-report of anxiety with the optometrist's ratings of their distress level.

It would also be interesting to conduct a study replicating some of the procedures of the present study in a more intimate setting, such as a rehabilitation center for the blind and visually handicapped. One of the problems in this field study is the presence of so many uncontrollable variables. In a smaller clinic, there would be only one optometrist, less distraction, more time for assessment, and easier access to many individuals.

During the data collection process, it was apparent to the investigator that a support system is critical for elderly people with low vision. It would be crucial for future researcher to examine the kinds of support systems elderly visually impaired persons use. If it is a support system based on their family, an investigation of the reactions of the family members would logically follow. Successful low vision rehabilitation involves the education, and often a change in attitudes, of the person with the visual impairment and his/her family. Many elderly individuals do not work to regain their independence because their family and friends do not encourage and/or may prevent it. Exploring the importance of the family system would perhaps provide clues as to how to encourage more elderly visually impaired persons to seek rehabilitation.

APPENDIX A

INTRODUCTORY LETTER

LETTER TO PARTICIPANTS

Dear

We are aware that you have an appointment scheduled at the Bascom Palmer Eye Institute Low Vision Clinic on . We are conducting a research study and would like to have your help. Having a visual impairment and going through the process of locating available aids and assistance can be very stressful. We are conducting a study designed to try to reduce the level of this stress and improve the quality of low vision care. Our goal is to create the best environment possible and to provide useful and practical services for persons with low vision.

What will you have to do? My name is Janice Bartleson and I am the researcher running the study. I will contact you by phone in the next week and ask you formally to participate. If you agree, you will be asked to respond to a series of questions during this phone call. This will take about twenty minutes. On the day of your appointment, you will be asked to come in a little early and participate in a thirty-minute counseling session. Then, following your regular appointment in the low vision clinic, you will be asked to respond to some further questions. This should take about ten minutes. Two weeks after your appointment, I will call you to see how your glasses or aids are working out. Altogether, participation in this study will take about an hour of your time. For participating, you will receive a free counseling session and/or an audio tape describing services available to you in such areas as transportation and reading resources. Also, you will receive the good feeling that comes from helping someone else in the future who may be in a similar situation to yourself.

Participation is strictly voluntary. If you decide not to participate, you will receive the same quality evaluations and medical services at Bascom Palmer Eye Institute.

I will call you soon and we can discuss any questions you may have about the study at that time.

Sincerely,

Janice Bartleson
Researcher

JB/por

APPENDIX B
INFORMED CONSENT

UNIVERSITY OF FLORIDA
DEPARTMENT OF COUNSELING PSYCHOLOGY

Subject's Name: _____

Subject's Address: _____

Project Title: The Effects of Counseling on a Low Vision Examination

Principal Investigator: Janice A. Bartleson, Graduate Student

I agree to participate in the research as explained below:

The aim of this study is to examine ways of making low vision examinations more comfortable and beneficial for individuals. The information gathered from this study will be used to develop a more comprehensive system for assisting individuals with visual impairments. To participate in this study, you will need to answer questions from questionnaires read to you (approximately twenty minutes) and to participate in a thirty-minute counseling session prior to your vision examination. Following the examination, you will be asked to complete one additional questionnaire read to you. You will be contacted by telephone two weeks after your appointment to find out how, and if, your new aids are helping you with your daily activities (five minutes). There is minimal risk involved in this study and the potential benefits to you include either an audio tape describing available assistance or a counseling session at no charge. There is no monetary compensation for your participation. IF YOU DECIDE NOT TO PARTICIPATE OR WISH TO WITHDRAW FROM THE STUDY AT ANY POINT, YOU WILL RECEIVE THE SAME QUALITY EVALUATIONS AND MEDICAL SERVICES AT BASCOM PALMER EYE INSTITUTE. PARTICIPATION IS STRICTLY VOLUNTARY.

The information gathered will be kept confidential within legal limits (or to the extent provided by law).

Please feel free to ask any questions you may have at this time. If you have any questions at a later date, you can contact me at the Department of Counseling Psychology, Psychology Building, University of Florida, Gainesville, FL 32612, (904) 392-0600.

The above-stated nature and purpose of this research, including the discomforts and risks involved (if any), have been explained to me. Furthermore, I understand this investigation may be used for educational purposes which may include publication. I also understand I may decline to participate or withdraw my consent at any time without prejudice. I have read and understand the procedure described above. I agree to participate in the procedure, and I have received a copy of this description.

Signed _____ Date _____

Oral consent given _____

I have fully explained and defined this research to the participant whose signature appears above.

Signed _____ Date _____

APPENDIX C

INFORMATION SHEET

INFORMATION SHEET

DATE _____ SUBJECT NUMBER _____

NAME _____

ADDRESS _____

PHONE _____ OPTOMETRIST _____

AGE _____ SEX _____ RACE _____

MARITAL STATUS _____ EDUCATION _____

OCCUPATION _____

HEALTH: Excellent Very Good Good Fair Poor

MEDICATIONS: _____

VISION LOSS _____

SIGHT LOSS: Gradual Sudden Expected Unexpected Stable Unstable

SIGHT LOSS OCCURRED WHEN: _____

STAI 1-S _____ R-S _____

STAI 2-S _____ MMS _____

STAI - T _____

PREVIOUS ACUITY DISTANCE IVC ACUITY DISTANCE

OD _____ OD _____

OS _____ OS _____

VISION AIDS PRESCRIBED Ss VIEW WITNESS

1. _____

2. _____

3. _____

4. _____

5. _____

APPENDIX D

PREPARATORY INFORMATION DESCRIPTION

PREPARATORY INFORMATION DESCRIPTION

"I want to describe the sequence of your visit today. After we talk, you will go back to the waiting area. Elena, who is the technician, will see you first. She will call for you in the waiting area and bring you back into this room. She will ask you some questions about how you spend your day, what areas you are having difficulty in, and your goals for coming here. Next, she will take time and show you some of the low vision aids available. You may find some of them useful. Others not. However, it is always good to know what is available just in case you may need them someday. She will complete her part of the low vision exam by testing your vision and looking at the glasses and magnifiers you brought with you today. After she is finished, you may have to wait to see the doctor. It depends on how busy the clinic is today. The doctor who is an optometrist will see you in the examination room next door. He or she will test your vision again and try to prescribe glasses or low vision aids that will help you achieve your goals. He or she will answer any questions that you have. The staff encourages you to bring a friend or family member into the examination with you."

APPENDIX E

PROGRESSIVE RELAXATION PROCEDURE

PROGRESSIVE RELAXATION

PROCEDURE

"Just sit back in the chair now and relax and let yourself be comfortable. Just close your eyes, listen to my voice, focus in on what I am saying, and let yourself relax. One of the best ways to begin to relax is to take a few moments, focus in, and concentrate on your breathing. Get in tune with your entire breathing process, think about it, sense it, feel it, experience it. Sense and feel air coming into the body as you inhale; sense and feel some air leaving the body as you exhale; begin to feel the relaxation, particularly in the chest muscles each time you exhale. Also note the nice rhythm produced each time you inhale and exhale a very comfortable relaxing rhythm much like a metronome just inhaling and exhaling. As this very normal breathing process continues, you will find that you are able to relax more thoroughly and more comfortably, and as I continue to talk with you, your breathing will assist you in relaxing even more deeply even more completely and at the same time I would like you to focus your attention on the top part of your head your scalp much like you did with your breathing, get in tune and in touch with your scalp, feelings in your scalp, sense and feel the muscles, the skin tissue, the hair follicles, and pay particular attention to the muscles of the scalp, allowing those muscles to become just as comfortable and just as relaxed and smooth as you would like. The mind is a very powerful thing, and anything you need to do to enhance that feeling of smoothness and comfortableness in those muscles is perfectly all right; for example, think of some-

Progressive Relaxation Procedure
Page Two

thing smooth, like a quiet lake early in the morning not even a ripple on the water, just as smooth as glass, or smooth like a plastic table top just very smooth, and then just let that feeling of smoothness and comfortableness and relaxation just filter through all of the muscles in the scalp, and then just as if you were taking a relaxing shower, let that feeling of comfort and smoothness and relaxation just flow down into the muscles in the forehead. When we frown or get angry, we get little wrinkles in our forehead, and just let those muscles smooth out and become relaxed and comfortable flowing, comfortable relaxation now, down into the muscles of the forehead, the temples, the cheeks, down into the chin, around the mouth, just all of the facial muscles now comfortably and thoroughly and more deeply relaxed such a good feeling, and that feeling of comfort and relaxation can continue down into the muscles of the neck the front, the back, the sides of the neck, down at the base of the neck where we get sort of tense or tight at times, flowing, comfortable relaxation across the shoulders, across the shoulders now, and down the arms, down the arms and through the elbows and forearms and the wrists and the hands comfortably and thoroughly relaxed. The hands and sometimes even the scalp may tingle a little, may feel a little warm or a little cool; that sensation does not have to happen, but if it does it is very normal and natural there is nothing to be concerned about just enjoy the deep comfortable relaxation. Your breathing is excellent now, it has slowed down

Progressive Relaxation Procedure
Page Three

nicely, comfortably and as that feeling of relaxation and comfortableness continues to flow down through all the muscles in the back and the sides and the chest and down into the waist you can just sense yourself relaxing more deeply and completely, more thoroughly and more deeply relaxed and as that feeling of relaxation and comfort comes into the waist area and down into the hips, you may sense a feeling of heaviness in the entire body, a feeling of heaviness more completely and more thoroughly relaxed, flowing, comfortable relaxation, down through the hips and into the legs, down through the legs, down into the ankles, and finally into the feet the entire body, all of the muscles in the body, thoroughly comfortable, and deeply relaxed listening to my voice, focusing in on what I am saying, and just letting go complete, total relaxation (Webster & Smith, 1984).

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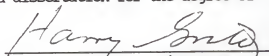
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BIOGRAPHICAL SKETCH

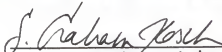
Janice A. Bartleson was born in Kansas City, Missouri, in 1957. She received a Bachelor of Arts degree in psychology from the University of Florida in 1979. After completing one year in the Counselor Education Department in school psychology, she entered the doctoral program in Counseling Psychology at the University of Florida in 1981. She completed her predoctoral internship at the Gainesville Veterans Administration Hospital in 1986 with special emphasis on medical psychology. She then entered private practice in the Miami area. Receiving a grant to support her research, Ms. Bartleson closed her practice and began work at Bascom Palmer Eye Institute. She anticipates returning to private practice upon completion of her doctoral degree.

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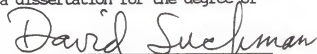
Harry A. Grater, Chairperson
Professor of Psychology

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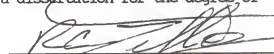
S. Graham Kosch, Co-Chairperson
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December, 1989

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